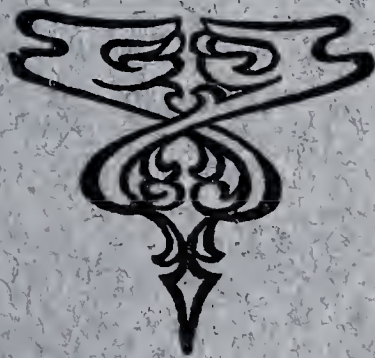


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**NEW YORK STATE
WATERWAYS ASSOCIATION**

FOURTH ANNUAL REPORT

INCLUDING

**Proceedings of the Annual
Convention**




**HELD AT ALBANY, N. Y.
OCTOBER 30-31, 1913**

NEW YORK STATE
WATERWAYS ASSOCIATION

FOURTH
ANNUAL
REPORT

INCLUDING
PROCEEDINGS
OF ANNUAL
CONVENTION

HELD AT ALBANY, N. Y.
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OFFICERS AND EXECUTIVE COMMITTEE
of the
NEW YORK STATE WATERWAYS ASSOCIATION.

President,

Henry W. Hill.....906 Mutual Life Bldg., Buffalo.

1st Vice-President,

John D. Kernan.....Utica.

2nd Vice-President,

Henry A. Meyer.....2509 Newkirk Ave., Brooklyn.

3rd Vice-President,

George H. Cobb.....Watertown.

4th Vice-President,

T. P. Kingsford.....Oswego.

Treasurer,

Olin J. Stephens.....220 East 138th St., New York City.

Secretary,

Frank S. Ellsworth.....5 South Water St., Rochester.

EXECUTIVE COMMITTEE.

Hon. George Clinton, Chairman...1012 Prudential Bldg., Buffalo.

Henry C. Allen.....City Hall, Syracuse.

George F. Argetsinger.....25 North Washington St., Rochester.

Miles AyraultTonawanda.

Joseph H. Bailey.....Patchogue, L. I.

Frank Brainard238 West 74th St., New York.

Harmer E. H. Brereton.....Lake George.

Celestin C. Burns.....Watertown.

Frederick W. Cameron.....First National Bank Bldg., Albany.

E. R. Carhart.....Produce Exchange, New York.

Edwin T. Coffin.....Chamber of Commerce, Albany.

Maurice F. Connelly.....Borough of Queens, New York.

Patrick W. Cullinan.....Oswego.

E. A. DesMarets.....College Point, New York City.

E. W. Douglas.....403 Cannon Bldg., Troy.

T. Harvey Ferris.....Homestead Aid Bldg., Utica.

Edwin A. Fisher.....City Hall, Rochester.

Frank S. Gardner.....203 Broadway, New York.

L. B. Greene.....Patchogue, L. I.

Howard D. Hadley.....Plattsburgh.

James T. Hoile.....198 Montague St., Brooklyn.

James T. Hutchings.....34 Clinton Ave., North Rochester.

Louis JaegerGreenport, L. I.

A. H. Jaggers.....	47 West 34th St., New York.
John G. Jones.....	Carthage.
A. R. Kessinger.....	Rome.
Peter B. Kiernan.....	Chamber of Commerce, Albany.
Nelson B. Killmer.....	396 State St., Brooklyn.
Richard M. McCann.....	150 Nassau St., New York.
Robert J. McFarland.....	900 St. Mark's Ave., Brooklyn.
Edward N. McKinney.....	927 Broadway, Albany.
S. Christy Mead.....	233 Broadway, New York City.
H. A. Meldrum.....	Chamber of Commerce, Buffalo.
Fred McNaughton	Commercial Association, Fort Edward.
Edward F. Murray.....	Murray's Line, Troy.
John R. Myers.....	Rouse's Point.
Edgar A. Newell.....	Chamber of Commerce, Ogdensburg.
Lewis Nixon	22 East 53rd St., New York.
Frank S. Oakes.....	Cattaraugus.
Charles E. Reid.....	137th St. and 3rd Ave., New York.
William J. Roche.....	207-208 Times Bldg., Troy.
Robert H. Rogers.....	General Electric Company, Schenectady.
Samuel Sanders	Dakota Ave., Richmond Hill, L. I.
E. Platt Stratton.....	College Point.
Edward R. Taylor.....	Penn Yan.
Dell L. Tuttle.....	914-920 Prudential Bldg., Buffalo.
George W. Wilson.....	459 East 28th St., Brooklyn.
Walter C. Witherbee.....	Port Henry.
Roland B. Woodward.....	Chamber of Commerce, Rochester.

Committee on Annual Report: President Henry W. Hill, chairman; Treasurer Olin J. Stephens and Secretary Frank S. Ellsworth.

Committee on American Society of Civil Engineers: John C. Parker, Rochester, chairman; Edward A. Bond, Albany; George A. Ricker, Buffalo.

Committee on Legislation: William J. Roche, Troy, chairman;

Committee on Hearings Before Rivers and Harbors Committee of the House of Representatives:

Committee on Montreal-Champlain-Hudson Water Transportation Route: Judge Charles F. MacLean, New York, chairman;

Proceedings of the Executive Committee at Annual Meeting

HOTEL TEN EYCK, ALBANY

October 29, 1913, 8 P. M.

President Henry W. Hill, Buffalo, called the meeting to order and presided, owing to the temporary indisposition of Hon. George Clinton, Buffalo, Chairman of the Executive Committee.

The following members of the Committee responded to the roll call:

Hon. Henry W. Hill, Buffalo.
Hon. John D. Kernan, Utica.
Olin J. Stephens, New York City.
Frank S. Ellsworth, Rochester.
Hon. George Clinton, Buffalo.
Frederick W. Cameron, Albany.
Patrick W. Cullinan, Oswego.
E. A. DesMarets, College Point.
E. W. Douglas, Troy.
James T. Hutchings, Rochester.
Richard M. McCann, New York City.
S. Christy Mead, New York City.
Frank S. Oakes, Cattaraugus.
Robert H. Rogers, Schenectady.
Edward R. Taylor, Penn Yan.
Dell L. Tuttle, Buffalo.
Edward N. McKinney, Albany.
Charles E. Reid, New York City.

President Hill announced that more than a quorum was present.

The program for the Fourth Annual Convention of the Association, as prepared by the Executive Committee, was, upon motion, adopted.

A vote of thanks was extended to Edward N. McKinney, Albany, upon motion by Captain E. A. DesMarets, for his successful labors in making preparations for the meeting.

Treasurer Olin J. Stephens reported a balance in the treasury of \$764, from which were to be deducted expenses amounting to some \$350. It was the largest balance, he said, that had been on hand since the Association was organized. President Hill explained what the expenses were, and moved that an honorarium be voted the Secretary. Judge Patrick W. Cullinan seconded the motion, and after remarks by Captain DesMarets and Richard H. McCann, it was carried.

MR. CULLINAN added: I desire to second the motion coming from President Hill. As a former president of this Association I know that the preparation of the report and of the program for this Convention have involved considerably more expense and time than any single member here who has not been a president of this Association can conceive.

I haven't any doubt but what if Senator Hill had had a client to whom he gave the time he has given this Association, he would be \$10,000 richer to-day than he is. I am satisfied that the Secretary in the work he has done would have received ten times as much money as the paltry sum we are considering giving him for his services. You have no idea of the correspondence that is required, the letters of inquiry that are sent out, the documents that are called

for, and it is a matter of great regret to me that we are not in a position to do something to compensate men for services that are so cheerfully and willingly given in the interests of the people of this State.

Here is a thought that I have, and I bring it up now for this reason, that I want you to think about it because it was suggested that if it was brought up in the convention, it might result in a diminution of dues. Why can't the State of New York be asked to make an appropriation for the payment of certain of the disbursements that are occasioned by the officers of this Association in the performance of a great public work?

There are other associations in the State of New York which are not members of any department proper but which receive annual appropriations from the State for defraying necessary disbursements in the performance of some State work. I can remember that years ago I was a member of the State Agricultural Society. It was not then recognized by the State but it was an organization in the interest of the promotion of the welfare of agriculture in this State and the State annually appropriated \$10,000 or \$15,000 for the benefit of that agricultural society and it was, as I have stated, not an official department of the State or a part of the State government. There are other societies, such as the State Historical Society—a bill passed through the last Legislature appropriating a certain amount of money to print the documents that were read and the addresses made at the various meetings held by that society. And I could go on and name a dozen associations in this State which receive aid from the State in this way.

Now, I can't conceive of any association that is doing more to make the State utilize all of these different water projects that we are familiar with than the Waterways Association of this State. Let us think it over between now and some time to-morrow or the day after, and consider whether it would be well to bring it up in the meeting and have a resolution adopted asking the State to pay some of the necessary disbursements of this Waterways Association.

MR. OAKES, Cattaraugus: I most positively object to that suggestion. A paragraph in our local paper will appear this week saying that this is a voluntary organization of gentlemen who are paying their own expenses and are asking no aid from the State, that we are simply an advisory board, and just as soon as we begin to take aid from the State, just so soon we shall have to mix up with politics and lose our force. Our suggestions won't have the weight they have now.

I had the honor of being a member of the National Chamber of Commerce in Washington and the same question came up. Of course, there were representatives there from other States and it was a very important meeting and there were representative men there. The question came up as to whether they would ask the government of the United States to pay anything, to pay our rent or any other expense connected with the institution, and it was most emphatically disagreed to because we did not want to have any string on that concern, so that we could go before the proper committees in Congress and the proper heads of departments and give the unbiased opinion of the business men of the United States. And I am in favor of keeping this organization in the same way.

Upon motion by Treasurer Olin J. Stephens, an Auditing Committee was named, composed of Edward N. McKinney, Frederick W. Douglas and Dell L. Tuttle, to audit the Treasurer's accounts.

The Treasurer was authorized to reimburse the President for stenographic, correspondence and other expenses incurred in his work as President of the Association.

PRESIDENT HILL: Our convention will open with enthusiasm, and I feel that we are in a better position than ever before. Men have indicated their willingness to speak before this convention to-morrow and next day who have never before appeared before the New York State Waterways Association. In one instance a man said it was against the rules of his organization to speak before organizations of this kind, but he is coming, and he is the Secretary of

the Chamber of Commerce of the State of New York, Mr. Pratt. His name was suggested first by New York members. I went and saw him personally. He said at first that he feared he could not come, but he wrote me afterwards he could not refuse. He said, "I thought I must accede to your request." These gentlemen have given not only the time to prepare their papers and come here and deliver the addresses, but have paid their own expenses. It is really a great tribute to our Association, it seems to me, for men to give up their time to prepare papers that are technical, and valuable to us.

I hope that Judge Clinton, Judge Kernan and Judge Cullinan and the other older members of the Association will notice that we have followers who are coming along now by the dozens where we had a few years ago a very few who were willing to give their time for the work which you gentlemen have been carrying on so magnanimously for so many years.

We ought to have all the individual members that we can get; first, that it may be State-wide, that we may have representatives in every town and every village that we can call on when public matters are under consideration and call them into a conference and decide on matters that are pending from week to week in the Legislature and are coming up all the time; and also we need them for the financial support which they can give us. So in both aspects of the case, we must increase our membership and every member of this committee may act as a committee of one to get new members. Let us bear this in mind.

Someone said, "Why don't you send out a missionary?" I don't think we can do as well in that way as we can by appealing to our members in the various localities to get new members, and especially to get their commercial organizations to appropriate small amounts toward our expenses. We need really \$1,000 a year to do our work, and there is no \$1,000 spent in this State that will accomplish one one-hundredth part of what may be accomplished by this Association. It is the only association that welds together all the commercial bodies of the State, and it can make itself felt on the Legislature and on the executive officers of the State, because its membership is absolutely non-partisan. We have as many Democrats as we have Republicans, and conversely. They are selected without regard to their political affiliations. The resolutions adopted by this association, after mature consideration by experts, are given weight in the determination of what ought to be done on pending matters in this State.

Here we have the greatest Waterway State in America, and this is the only association that covers the whole ground from Montauk Point to Niagara Falls. We ought to raise \$1,000 a year to keep it going. The services are largely gratuitous of those who meet year after year to carry on the work. We have endeavored this year to do this, and pay all our bills, and have something left in the treasury, so that the new administration that takes charge of matters for the ensuing year will have something toward the expenses of this organization. They will really need \$1,000.

We were very fortunate this year in getting the report printed. We sent out 2,500 copies. They were sent to every commercial organization that was a member of this Association, and to many that were not. Six hundred copies were placed with the Commissioner of Education, with instructions to see that they were sent wherever other material went out from the Education Department. Nearly every library in this State will have a copy of the proceedings of 1912. Similar distribution of the proceedings of 1913 should be made. The last report was printed, bound and delivered for approximately \$320, and that, in my opinion, is a good record, because there are about two pages of ordinary reading matter on each page of that report. All the technical papers and illuminating addresses of last year are now public property and are for the benefit of all the people of the State.

Let us keep this work up, and let us get other organizations represented in this Association to contribute towards the expenses, for it is performing a work of public interest such as is being done by no other organization in the State.

MR. DESMARETS: What is the present income, approximately?

PRESIDENT HILL: It was about \$800 last year. Some associations which contributed last year may not contribute next year. Some large organizations with 3,000 members contributed only ten dollars. Is that fair, when our members, like Mr. Clinton, Judge Cullinan, Mr. Kernan and others are giving their time to promote matters of public interest? All we ask is that, if they give their time, their work may be preserved and spread broadcast and the whole State have the benefit of it.

Mr. DesMarets suggested the adoption of a resolution commending President Hill for the work he has done for the Association in the past. President Hill replied that, while he appreciated the suggestion, he has simply done his duty. Mr. Clinton suggested that if a resolution were to be adopted, it should come from the convention as a body.

Mr. DesMarets also made a suggestion regarding the securing of advertising in the printed report of the Association as being a good method of increasing the revenues of the Association. Mr. Clinton thought the suggestion a good one, but thought it was not proper to ask the members of the Association to solicit advertising, but that the matter might better be handled through an advertising agency.

CHARLES E. REID, New York: I wish to remind you that the printing of our annual report last year was underwritten by the people of Watertown, where our convention was held. I personally collected \$300 and turned it over, and I think it can be done again.

Speaking to the question suggested by Judge Cullinan, as to asking the State to make an appropriation to help meet the expenses of the Association, W. Fred Silleck, Brooklyn, questioned the propriety of such action, and said he believed the result of such action would be a lessening of income and a lessening of interest. "We are all of us interested in those things that we pay for," he said, "but we are none of us interested in things that come gratuitously."

President Hill referred to Mr. Reid's statement concerning the \$300 subscribed by people in Watertown to help defray the expenses of printing the report of the Association, and suggested that organizations throughout the State be requested to make contributions, inasmuch as the work of the Association benefited the State at large. He also referred to the distribution made of printed reports of the last convention, and asked whether it met with the approval of the members present.

Upon motion by Mr. Reid, the action was approved.

Upon motion by Mr. Reid, it was voted to provide registration cards for the use of delegates, in order to secure a full and accurate record of the attendance, as well as of the organizations represented by the delegates. The Albany Committee on Arrangements announced that it would provide the cards.

With the understanding that the President had discretion to extend the time when he deemed it advisable, it was voted that the speakers at this convention be limited to 20 minutes each.

PRESIDENT HILL: I appreciate this expression. It gives me the backing of the Executive Committee. The speakers were also told that they might prepare a synopsis of their paper or address and that their addresses, whether read or presented only in part, would be printed in full in the record.

Mr. McKinney presented the report of the Auditing Committee, recommending the payment of all bills before the Association, and upon motion by Mr. Reid the report was received and recommendations adopted.

Mr. Cameron, of Albany, announced the place of meeting of the convention to be the auditorium of the State Education Building, corner of Hawk street and Washington avenue. He stated that provision had been made for committee rooms for the use of the members of the Association in the same building. He also announced that cards of admission to the luncheon to be tendered the members of the Association on Friday would be distributed at the time of registration at the opening of the convention.

Judge Kernan offered the suggestion that there be attached to each copy of the printed report of the Association sent out a slip stating that it was presented with the compliments of the Waterways Association and that a contribution to meet the expense of printing, etc., would be very gladly accepted.

Mr. McKinney, of Albany, gave an interesting account of how he had succeeded in obtaining the largest increase in membership of the Association thus far credited to any one city. He said that he had sent a letter to the members of the Albany Chamber of Commerce, giving an outline of the work that the Association was doing for the whole State, and giving a local touch to the appeal by referring to the fact that this organization could help Albany in obtaining governmental approval of the proposition to deepen the Hudson river between the cities of Hudson and Troy. As a result of this letter, Mr. McKinney added 128 members to the Association. He suggested that the plan be tried in their home cities by other members of the Association, and predicted a very successful outcome of any such efforts.

Mr. Stephens brought up a subject that had been suggested by him before, namely, the proposition of arranging for a dinner in Washington during the convention of the National Rivers and Harbors Congress, to be given to the Senators and Members of Congress from this State. He said he believed such a dinner would afford a very valuable opportunity of presenting to the Senators and Representatives the matters in which the Association is interested and that it would result in favorable action being taken by such officials.

President Hill said that certain Representatives were expected to be present on the second day of the convention. He believed the matter of giving a dinner was a difficult question to handle, inasmuch as it would prove to be a rather expensive affair. Mr. Reid thought the proposition an extremely inviting one, and urged strongly that it be carried through, stating that a similar dinner was given to the Massachusetts delegation in Washington, which was productive of very good results.

Mr. Mead suggested that there should be some specific program outlined as a result of the deliberations of the meeting of the Association and that this should be presented to the Senators and Representatives in Congress as embodying the things which the New York State Waterways Association favored and which they were desirous of obtaining at the hands of Congress.

Mr. McKinney heartily concurred in the remarks of Mr. Mead and said that in order to accomplish what they desired, they must get the men in Congress from this State working together in a body for definite objects, and believed a dinner would afford a good opportunity of presenting the program which the Association favored.

MR. CLINTON: I move that a committee of five be appointed by the President, of which the President shall be one, also Mr. Reid, Mr. Mead, Mr. Stephens and Mr. McKinney, to take under consideration the gathering together of the representatives in Congress at the time of the next meeting of the National Rivers and Harbors Congress, for the purpose of presenting the particular projects which the Association favors.

MR. STEPHENS: I move to amend the motion by allowing the President to appoint such members as he sees fit to constitute the committee.

Motion seconded. Carried unanimously.

Motion made to adjourn subject to call. Seconded. Carried unanimously. Meeting adjourned.

FOURTH ANNUAL CONVENTION

of the

NEW YORK STATE WATERWAYS ASSOCIATION

State Educational Building, Albany, N. Y., October 30 and 31, 1913.

Thursday, October 30, 1913.

Morning Session.

Hon. Henry W. Hill, Buffalo, President of the Association, called the convention to order at 10:28 o'clock.

Secretary Frank S. Ellsworth, Rochester, present and acting.

Rev. William Herman Hopkins, pastor of the Calvary Presbyterian Church, Albany, pronounced the invocation.

Greetings in behalf of the people of Albany were extended by Corporation Counsel Arthur L. Andrews, representing His Honor, James B. McEwan, Mayor of Albany, who was detained at home by illness.

GREETINGS FROM ALBANY.

MR. ANDREWS: Mr. President and Gentlemen: I regret, as I am sure you all do, that the physical condition of the Mayor prevents him from being here this morning to welcome you to our city. But I am glad that it is my privilege, as his representative and as the representative of the city administration, to extend to you a hearty greeting from Albany.

Albany is vitally interested in the business which engrosses the attention of this Association. With its sister city, Troy, it is at the head of navigation of the Hudson river, a stream which for many years has been a vehicle of transportation of great importance, not only to the localities along the stream but to the State at large. Any plans to deepen and thereby facilitate transportation thereon is of interest to all the citizens along the waterway.

And we are particularly interested for the reason that we believe that if you are successful in the object which you are seeking, it will inure very much to the benefit of this particular locality. The city itself is doing what it can along the lines of improving its water facilities. We are engaged at the present time in expending a large sum of money in improving our river front by the building of concrete docks and otherwise adding to the facilities for transportation and to make it easier and cheaper for the companies engaged in water transportation to do business. Five steamboat lines have already entered into negotiations with the city for dock facilities, improved and increased in order that they may handle not only the business which they now have but any business which may come to them by reason of an improvement of the waterway.

It may not be that all the hopes which have been indulged in with respect to a Deeper Hudson will be realized. There seems to be a divergence of opinion both as to the time when such a project may be carried out and also as to what will accrue in case the project for a Deeper Hudson is carried out. But the city of Albany has not been backward in taking advantage of the possibilities which may accrue from such a course. In connection with the river front improvement, the city has purchased an island below the Greenbush bridge, the lower one of three bridges which cross the Hudson river at this point. This island has a water frontage of over 2,000 feet where by the construction of docks and

ships we will be able to accommodate a very large number of the very largest boats that can possibly, under any circumstances, navigate the Hudson River.

And so, speaking for the present Mayor, I have to say this morning that he and the city administration are in sympathy with your movement and with what you are doing, and are grateful for any results which may accrue to the advantage of the city of Albany. I cannot speak for any very great length of time, for our beloved Mayor goes out of office on the 31st day of December, but I venture to prophesy, from what I know of those who are likely to succeed him, that you will find equal support and sympathy and interest in your movement from any administration that there may be in the city of Albany.

I greet you in no perfunctory manner. We are glad to have you here. We hope your stay will be most pleasant and profitable.

PRESIDENT HILL: Address of welcome by the Hon. Peter D. Kiernan, President of the Albany Chamber of Commerce.

GREETINGS FROM ALBANY CHAMBER OF COMMERCE.

MR. KIERNAN: Mr. President, Ladies and Gentlemen: In extending to you a welcome on behalf of the Albany Chamber of Commerce, I do so with the feeling that it is highly appropriate that this convention should be held in this city — this city which is hallowed by the memories of Henry Hudson, by the trial of the "Robert Fulton," and by the labors of that great progenitor of waterway development, DeWitt Clinton. We have long cherished the vision that we would yet see the great ocean steamers unloading their cargoes at our wharves and our docks, and we are in hopes that the completion of the Barge Canal and the Panama Canal will bring our vision to fruition.

We recall the difficulties which DeWitt Clinton met with in the building of the Erie Canal — the indifference of the people, the opposition of the affected interests, the criticisms of its financial success, and we to-day are confronted with the very same obstacles which he had to contend with. But we are confident that the time will come when all of these obstacles will be swept away and that future "Imperators" will sail to Albany.

In renewing our welcome to you, I can do it in no more fitting terms than in the words of the poet:

"You may come in the evening or come in the morning,
Come when you're looked for or come without warning;
A thousand welcomes will be here before you,
And the more often we see you, the more we'll adore you."

PRESIDENT HILL: It is a great pleasure, Gentlemen of the Convention, and it is the first occasion we have had such an opportunity to present to the members of this Association the Governor of this State. I take great pleasure in presenting His Excellency, Martin H. Glynn, Governor of the State of New York, who will not only speak words of welcome but something in regard to the improvements in the Upper Hudson. (Applause.)

GOVERNOR GLYNN: Mr. President, and Members of the State Waterways Association: It seems that you are thrice welcome to Albany — welcomed by the Mayor, welcomed by the president of the Chamber of Commerce, and welcomed by the Governor of the State. The president of the Chamber of Commerce has told you in poetic words that you are welcome in the morning and welcome in the evening, but let me supply the missing link by saying that you are welcome at noon-time in the Executive Chamber if you will only come over to see me. (Applause.)

Your chairman has suggested that I will speak a few words of welcome and a few words on the waterways of the State of New York. Mr. Andrews and Mr. Kiernan have spoken so well the words of welcome that further words on that topic from me would be superfluous, and for me to talk at any length on anything didactic when speaking to you upon waterways would be the attempt

of a neophyte to instruct experts. It would be as useless as to attempt "to gild refined gold, to paint the lily," and that I am not going to try. I know that I am here simply by virtue of my office, but being here, I am going to take some small advantage of the occasion by expressing a thought or two that I have upon the waterways of this State.

I believe that the Erie Canal is one of the proudest incidents of which the people of this State have reason to congratulate themselves. The Erie Canal brought fame to the Clintons, brought cheap foodstuffs to our metropolitan district, and fattened the pocketbooks of a district that lies to the west. I am for all that the Erie Canal stands for. I glory in its past. I take pride in what it has done and what it can do, but if there is anything that the Erie Canal and the waters of the canal can do in the future that they have not done in the past, I am for that policy, if that policy will not injure the Erie Canal. I would not do a thing to injure the primary purposes of the Erie Canal but if, in the expenditure of \$150,000,000 which the people of this State have made for that canal, there is any way in which the waste waters, if there are waste waters; if time shall prove they are waste waters; if scientific information shall convince us that there are waste waters—if there is any way that that waste water can be used without injuring the canal for navigation purposes or hurting its commerce, I hope that I will live to see the day that I will contribute in some small way to the consummation of that policy. (Applause.)

Now, I don't want to be misunderstood on account of any past incidents in what I say in regard to this matter. I would be the last man in the world to injure the Erie Canal, but I want to be one of the first to make the Erie Canal more popular than it has ever been in the history of the State. (Applause.) I am for progress, not for looking backward; I am for construction, but in an attempt to be constructive. I do not want to be, and I will not be, destructive. (Applause.) Any stand I may take myself on that question will not be based on fancy; it will be based on the knowledge of scientific men, and if in the past any stand of mine may have been wrong, if I can be convinced by accurate information and scientific knowledge that I am wrong, I am perfectly willing to change my opinion on the subject. But if, on the other hand, scientific knowledge and investigation proves that some of us were right in the past, I am going to be like Davy Crockett and go ahead on that policy.

So much for the Erie Canal and so much for my stand on it. I pledge Senator Hill and to Mr. Clinton and to every man in this Association who in years gone by have worked for the canal—I pledge them my hand, my heart and my head to protect what they have done, and I hope we will be able to work in harmony for what the future may bring forth.

The Erie Canal ends at our doors here at Albany. First of all, I am a citizen of the State of New York; secondly, I am a citizen of the city of Albany. The Erie Canal ends at our gates. The Hudson River is but a continuation of the Erie Canal. New York State has spent something like \$150,000,000, I believe, to build the Erie Canal. That \$150,000,000 has not been expended solely for the interests of the people of this State. That \$150,000,000 has gone, directly and indirectly, to benefit a section occupied by 12,000,000 people, people to the west of us, but mainly, however, in contiguous territory. And I for one contend that in view of that expenditure of \$150,000,000 for the benefit of a section of the United States occupied by 12,000,000 people, the United States government has not been fair to New York State in its treatment of our waterways. We have spent \$150,000,000 for the Erie Canal while in the last hundred years the United States government has spent only \$500,000,000 upon all the rivers and harbor improvements in this whole country. We have spent more than one-quarter as much money upon the Erie Canal as the United States government has spent upon all the harbors and all the rivers in this great country. And of that \$500,000,000, I contend that New York State has not received its just share on account of political log-rolling, congressional jobbing and senatorial courtesy at Washington.

In proof of that contention I point to the \$7,000,000 that the United States government spent on the Hennepin Canal to connect Lake Michigan with the

Mississippi River. That Hennepin Canal is a fine monument to the engineering genius of the men who built it, but it is a mighty poor addition to the mercantile interests of this country. Seven million dollars spent upon a useless canal in Illinois, and in 100 years, up until the last and pending appropriation, it has spent only \$5,000,000 upon the Hudson River! Think of it! Seven million dollars for one useless canal in the West on account of a combination of powerful Senators and \$5,000,000 in 100 years upon the Hudson River!

New York State, with its great port at New York City, has borne under our national indirect system of taxation the great brunt of the national taxation in this country. With the advent of the income tax, New York State will continue to bear the brunt of our new national system of taxation. If we furnish the great bulk of the money to run the government, I contend that we are entitled to a proportionate amount of the money spent to develop our rivers. (Applause.) A proportionate amount of money spent upon our Hudson River, proportionate to what has been spent upon other rivers, will bring ocean-going ships up the Hudson river to anchor at the foot of State street or any other docks in the city of Albany.

New York City may be somewhat cool to that proposition but the time is not far distant when New York City will be as much distressed to find dock room for the great ships that traverse the ocean as she is troubled to-day in finding residences for the people in the southern end of her territory. The time is going to come when New York City must find dockage somewhere up this river, and Albany is the place.

The yearly tonnage of the Hudson River for the last five years has been 3,368,795 tons, and the yearly average value of that tonnage has been \$139,924,444. Down in West Virginia, to continue the comparison of what the United States government has done for other districts and not done for New York, they have a river known as the Kanawha. In 1911 the tonnage of the Kanawha River was 1,400,000 and the value of the tonnage was less than \$5,000,000, and yet for the improvement of the little Kanawha River the United States government has spent nearly as much money as it has spent on the Hudson River.

In the shallows of the Tennessee River at Chattanooga the United States government has spent so much money for improvements that the total expenditure represents a cost of \$11.91 a ton for every ton of freight carried through the channels that the United States government has completed. If this same proportion has been observed in the treatment of the Hudson River, the United States government would have spent in the past \$80,000,000 instead of the \$5,000,000 that it has spent here.

For every ton of freight carried through the lock of the Wabash River at the Grand Rapids in Illinois, the Federal government has laid out an expenditure which represents \$56.50 per ton of freight. If this proportion had also been observed in the treatment of the Hudson River, the United States government would have spent in years gone by \$224,000,000 upon the Hudson River instead of \$5,000,000.

The Federal government has spent a ratio of twenty dollars a ton for every ton of freight carried on the Big Sandy River. This appropriation upon the Hudson River would have meant the expenditure of \$80,000,000 instead of \$5,000,000.

In 1908 the United States government spent in interest and maintenance the sum of \$183 for every ton of freight carried on the Red River between its mouth and Fulton, Arkansas. That same proportion observed on the Hudson River would have meant an expenditure of \$7,000,000,000 instead of \$5,000,000.

Now, as Governor of the State of New York, I am pleading to the officials at Washington for the same kind of treatment for our Hudson River that they have given the small and unimportant rivers of the United States. I am pleading for a canal that will let the large ships sail up and anchor at our docks, so that in return for the \$150,000,000 we have spent for the benefit of a section of the United States occupied by 12,000,000 people, we will have a chance from the eastern terminus of this canal to send a golden argosy of freight from the Erie

Canal to the markets of the East or to the markets of the West through the Panama Canal. All we ask is that Uncle Sam reciprocate for what we have done and enable us to make a chain that will reach from the eastern terminal of the Erie Canal at Albany to the eastern terminal of the Panama Canal at the south.

President Hill responded to the greetings, the address of welcome and the address of Governor Glynn. With his response, President Hill coupled his annual report as President of the New York State Waterways Association.

PRESIDENT'S ANNUAL REPORT.

PRESIDENT HILL said:

Mr. Andrews, we deeply appreciate the cordial greetings which you have extended for Mayor McEwan to the officers and delegates of this fourth annual convention of the New York State Waterways Association. We have looked forward with deep interest to our meeting again in your beautiful city, where we were so delightfully entertained three years ago, when this Association held its first annual convention. Since that time it has grown in numbers and increased in influence until we believe it has now become a strong organization and a potential factor in the affairs of the State. Its membership comprises representatives from the commercial organizations and political divisions of the State, and its purposes are public and State-wide. These are defined by its constitution and comprise the practical development of the waterways, artificial and natural, including the rivers and harbors, the conservation and utilization of water powers which are not utilized, as well as the improvement of the navigable waters, wherever practicable, and especially the extension and development of its canal system.

We are more or less familiar with the hydrology of the State and its abundant water supply. In addition to its canal system, it has hundreds of miles of navigable and non-navigable lakes and rivers and an unfailing supply of water in the Adirondack and Catskill mountains superior for hydro-electric development to those possessed by any other State in the East. Its western shores are washed by the waters of the Great Lakes and the St. Lawrence river, its eastern by those of Lake Champlain, Long Island Sound and the Atlantic ocean, its southern rivers, once navigable, flow into the Delaware and Chesapeake bays, and its rivers in the southwest are tributary to the Ohio, down which commerce passes into the Mississippi and Gulf of Mexico. Its interior lakes supply water for such cities as Utica, Syracuse and Rochester, and include such picturesque bodies of water as those of Lake George, Seneca, Cayuga, and a score of other lakes, among the most attractive in the country. Its rivers, Niagara, St. Lawrence, Oswego, Hudson, Mohawk, Genesee, Black, Seneca, Salmon, Susquehanna, Delaware, Chemung, Raquette, and many others, constitute a large part of the State's natural wealth, and have contributed immeasurably to its commercial and industrial development.

From 1614, the time that Henry Christiansen, the Dutch captain, established a permanent station on the Hudson in the vicinity of the present city of Albany, for the interchange of trade flowing along such avenues as the Mohawk on the west and the Hudson on the north and south, down to 1903, the time of the establishment of the eastern terminus of the new Barge Canal from the west and the southern terminus of the Barge Canal from the north, at a point a little north of Albany, this city has been a commercial center for the interior trade of the State, and it will undoubtedly so continue as a result of increased commerce over the Hudson and Barge Canals finding here their outlet to the sea. It is now the purpose of the people of Albany to make this a seaport, which can be done by dredging the Hudson river for a distance of 30 miles to a depth adequate to admit of ocean-draft vessels. It was our pleasure to participate in the discussion of that project before the Board of Engineers of the United States Army at its session in Albany in 1912, and, although their decision was not favorable, it is not likely that the project can be much longer postponed. We expect the matter to be presented to the members of this Association during its

sessions, and we trust that public interest will be so awakened that it will be reflected through members of Congress in affirmative Congressional action to that end.

I regret that on this occasion the mayor's condition is such that he will not be present with us, but I hope his condition is not such that it will impair his usefulness to the city and the State, but that he may in a short time recover and resume his duties as executive of this city.

President Kiernan, your address of welcome has forcefully brought to our attention the deep interest which the Albany Chamber of Commerce is taking in the development of waterway matters in this State. Mr. McKinney, former president of the Albany Chamber of Commerce, and other delegates in attendance at the convention at Watertown a year ago, made so favorable an impression upon our members that we were pleased to accept the cordial invitation extended on that occasion to meet in Albany this year, and we are here in response to that invitation. I may add that through Mr. McKinney and his associates a large personal membership has been secured from Albany in this Association, which we gratefully appreciate, and we shall hope to see many of them at the sessions of this convention. It is indeed encouraging to have the Albany and other Chambers of Commerce take an active part in the affairs of this Association. It is the only organization of the kind that includes in its membership representatives of all the commercial bodies and political divisions of the State, and is capable of accomplishing much for the public welfare. The stupendous problems confronting the people of this State in relation to water storage, hydro-electric development, purification and sanitation of its water courses and operation of its artificial waterways require much careful consideration on the part of those especially qualified to discuss such matters, and there is no other forum where these may be so well presented as that afforded in the sessions of this Association, and we believe that the Albany Chamber of Commerce will be greatly benefited by our meeting here in such large numbers to hear presented and deliberated upon these large waterway matters of the State, as indicated in the lengthy program of this fourth annual convention.

Albany is not only the capital city of the State, but its geographical center, and may become, also, an important commercial and industrial center as developments go on in navigation, water storage, hydro-electric development and other water matters.

Your address of welcome meets with hearty response on the part of officers and members of this Association, and we assure you it is a pleasure to be so cordially welcomed. We also appreciate what your committee on entertainment has done for our accommodation in securing this beautiful hall, with rooms for committee meetings, in this new State Educational Building, and in providing all other accessories necessary for the despatch of business of this Association and for the conduct of its proceedings.

From 1896 to 1911, fifteen consecutive winters, while a member of the Legislature, I resided in your city, and do not now feel that I am wholly unfamiliar with many of the important matters affecting its welfare. I trust that we may be able to create public sentiment in favor of some of these matters and to arouse enough interest in members of Congress to induce them to unite in securing Federal appropriations for such needy and worthy waterway projects in this State, including the deepening of the Hudson River, the rectifying and improving of the channel of the Harlem, the deepening of the channel of the upper waters of Lake Champlain, and the other projects heretofore reported on by Col. Black and other government engineers.

Your Excellency, Governor Glynn: Your words of welcome are also most acceptable to the members of this Association, who congratulate you on your elevation to the Chief Magistracy of the Empire State. We recall your services to the State as its Comptroller during the years 1907 and 1908, and the jealous interest taken by you in such legislation as was favored by members of this Association in relation to the bond issues and other financial measures to provide funds for carrying on such important public improvements as the construction of the new Barge Canal system. That service elicited general commendation, and I know from personal experience, as a State Senator at the time,

that you jealously guarded the interests of the State during that formative and critical period of financing the \$101,000,000 canal project, which the people of the State had authorized. While the responsibilities of that position were great, still more onerous ones now confront you as the Chief Executive of the State, not only in relation to the prosecution, and, as far as possible, the completion of the work of construction of the Barge Canal system, but also in relation to the conservation and utilization of the almost inexhaustible surplus waters of the State, said to be capable of producing nearly 1,000,000 horse power, now entirely running to waste. The latest official reports to which my attention has been called estimated the possible water power development of the State, exclusive of the Niagara and St. Lawrence Rivers, at 1,500,000 horse power, of which only 580,000 horse power has been developed and is being utilized. The pending proposed amendment to section 7 of article VII of the Constitution, which will be discussed more at length a little later, is designed to make it possible to utilize much of the undeveloped water powers of the State, and in case that be approved at the coming election, you will have the opportunity of formulating a general policy, State-wide in its scope, for the conservation and utilization of such surplus waters under State regulation and control, and so inaugurate a new State governmental policy that may prove as far-reaching and beneficent as that formulated and put into operation by DeWitt Clinton in projecting and carrying to completion the original canal system of the State. This requires the highest type of constructive statesmanship, and we trust that the debates and proceedings of the present fourth annual convention of the State Waterways Association will throw some light on the stupendous problems involved, and aid you and other executive officers and the Legislature of the State in formulating its State waterway policy. I think I can assure you that in the solution of these problems you will have the assistance of the members of this Association, some of whom have devoted years to the study of the different phases of the subject. Their activities heretofore have been, and doubtless in the future will be, dictated absolutely by *pro bono publico* interest, which should actuate all good citizens in their efforts to promote the welfare of the State and prevent the decay of its civilization which results from the lack of patriotic endeavor.

We appreciate the courtesy of your presence, and have listened with marked interest to what you have said in relation to improving the channel of the Upper Hudson, and we assure you of our well wishes in the administration of the affairs of this great State.

Officers and Members of the New York State Waterways Association, Ladies and Gentlemen.—It is a pleasure to welcome you to this fourth annual convention of the New York State Waterways Association and to congratulate the organization and political divisions of the State which you respectively represent on manifesting such deep interest in the matters that have induced them to send you here in such numbers. It is, indeed, encouraging to find waterway sentiment now so prevalent from Montauk Point to Niagara Falls. Many of you recall the time, not so far distant, when conventions of this kind and magnitude were impossible in this State, but during the last decade public sentiment in favor of waterways, water storage, hydro-electric development, and especially in relation to navigation projects, has grown steadily, and has permeated all the sections of the State. The conservation and utilization of water powers is now generally recognized as important as the canalization of channels of rivers, construction of canals and their operation for navigation purposes. These two great economic uses to which waters may be applied are now recognized in all parts of the State, and there is pending at the present time a proposed amendment to the Constitution known as Amendment No. 4, in relation to water storage in the Forest Preserve that is intended to benefit large areas and thousands of our inhabitants, who have not where else to avail themselves of water for industrial purposes. It is thought that the State hitherto may have been over-conservative in relation to water storage and hydro-electric development and the pending amendment, after mature consideration, has been proposed as a solution of the constitutional questions involved, so far as the Forest Preserve is concerned. This matter will be presented by the Hon. Frank S. Gardiner, Secretary of the Board of Trade and Transportation of New York, who is largely responsible for the so-called forest

provision of the Constitution, being section 7 of article VII, as well as for the wording of such proposed constitutional amendment, which, in addition to the existing provision of the Constitution, authorizes the Legislature by general laws to provide for the use of not exceeding three percentum of the State land for the construction and maintenance of reservoirs for three specific purposes, viz., for municipal water supply, for the canals of the State and to regulate the flow of streams. Before the reservoirs can be constructed surveys must be made of the boundaries of areas to be flooded and other minor matters are also provided for. This Association has already endorsed such proposed constitutional amendment, but it is important to call attention to it again, in order that it may receive popular approval at the polls at the coming election on November 4, when it is to be voted upon.

You will be interested to learn that the affairs of the Association for the last year have been somewhat improved by the acquisition of some new members, and still there is imperative need of many more members if this organization is to succeed. I believe you will all appreciate the force of this suggestion and I hope you will appeal to others to become members of the Association. One of the important achievements of the Association during the year was the publication and distribution of the report of the proceedings of the Third Annual Convention of the New York State Waterways Association, held in Watertown, in September, 1912. The Association at that time authorized and directed the publication of that report. Considerable time was occupied in obtaining from some of the speakers manuscript copies of their addresses and other matters intervened to delay the final printing and publication of such proceedings. The Secretary, Frank S. Ellsworth, is entitled to much credit for putting the material into shape for the printers and during his absence on an extended trip to the Pacific Coast it fell to me to read some portions of the proofs and to devote some time to its final publication. It is the most comprehensive report ever issued by this Association and comprises all the papers with one or two exceptions that were read at the Watertown convention, and I hope it will be found to be fairly free from typographical errors. Some of the papers were technical, but still they were all valuable and interesting and it is a credit to any organization to be able to present literature on waterway matters of such high quality as is found in that report. Copies were distributed to the principal commercial organizations of the State, and to all the members of this Association by our efficient Treasurer, Hon. Olin J. Stephens, and we have a few left for libraries and for further distribution. It seemed important to get the information into the hands of citizens interested in waterway matters as expeditiously as possible, and we sincerely hope they will be found of permanent value to all interested in the matters therein discussed. Many of the papers were prepared by speakers more or less expert in the subjects by them respectively considered and the papers constitute a valuable contribution to the literature on the waterways of the State. The publication and distribution of the report has involved the Association in considerable expense, and it is necessary that concerted efforts be made to increase the funds of the Association to meet such expenses and others necessarily involved in maintaining an organization of this character. Its activities, however, are not confined merely to an annual convention, but its executive officers are called upon to consider and act upon many waterway matters occurring from time to time during the year, and especially so during the sessions of the Legislature. During the year the Executive Committee had several sessions at Albany over pending legislation and adopted resolutions for and against such matters as they considered required either approval or disapproval from a public point of view. Many matters which came to the attention of the membership in general of the Association were considered by the executive officers and Executive Committee and disposed of during the year. These made it a vital organization. It is the purpose of its officers and Executive Committee to keep in close touch with all waterway matters in the State and to act upon such matters from time to time as they arise, and as they believe public interests warrant. We would have the members of the Legislature and the representatives in Congress feel that this Association

acts in a purely *pro bono publico* capacity, with no private interests to subserve and no public interest to oppose and that when it declares on a given proposition it will be understood that it does so only after mature deliberation and then without fear or favor and purely in an advisory way in the interests of the public weal as they appear to its executive officers and committees. Its functions are not only thoroughly practical in that it considers all pending waterway matters in their legal, constitutional aspects and practical bearings, but also it is largely educational in that its conclusions that have been worked out with care and formulated, are presented to its members, legislative committees and executive officers for the purpose of enlightening them on aspects of such pending matters as may have escaped their attention. The officers and the Executive Committee of this Association are largely expert in waterway matters and many of them have devoted years of time to the study of such questions. They are freely giving their services through this Association to the State in the development of its commerce, the building up of its industries and promoting its general welfare. It may therefore properly and does appeal to the considerate judgment of the enterprising people of this State, to its commercial organizations and political divisions for such support, financial and otherwise, as may be necessary to enable it to go forward with its beneficent activities, meeting and solving new problems as they arise from time to time in waterway matters. The water resources of the State are almost inexhaustible and the possibility for water power and hydraulic development cannot easily be estimated. A million tons of horse power are going to waste annually and hundreds of miles of navigable waterways and rivers that may easily be made navigable are not being used in some cases at all, and in many others to a fraction of their capacity, so that the field is state-wide and inviting, within which such an association as this may extend its activities. Furthermore, it is almost an imperative necessity that some such association as this keep in touch with all such waterway matters as they arise from time to time in various parts of the State and will continue to arise in a State possessing such water resources as does the Empire State, surpassing those of any other equal area within the domain of the United States, and it may fairly be argued that these waterways are as valuable to New York as are the coal fields of Pennsylvania to that State, and have contributed more to the upbuilding of the Empire State than all its other natural resources combined, and still they are only partially utilized and to a great extent as yet undeveloped. Who is prophetic enough to foretell the value of these water powers, if conserved and utilized for commercial and industrial purposes?

One of the functions of this Association is to direct public attention to these matters and also to stimulate public interest in the preservation of the Adirondack and Catskill forests, in order that the sources of water supply for canals, for supplying cities and for commercial and power purposes may not be depleted by the destruction of those forests. It is confidently believed that the constitutional amendment before referred to will solve the question so far as these State preserves are concerned, and at the same time remove the restriction now imposed upon forest preserves far enough to admit of the utilization for public purposes, and for private purposes under public regulation and control, of the millions of tons of water power going to waste there now. By those familiar with this subject it is believed that the State ought not to lose the benefit of such vast surplus waters, that may readily be conserved and utilized for navigation and for industrial development. It is also believed that this may be done without laying waste or despoiling the Adirondacks and the Catskill mountains of their forests.

Since our last convention Barge Canal terminals have been located in some of the principal canal ports of the State and in some cases contracts are being advertised for the construction of such terminals. It has been the practice of the State Engineer and Surveyor to call into consultation parties in the various localities interested in public terminals and so far as possible under the referendum measure conform improvements to the exigencies of the several localities. We believe that the terminal question is very largely solved and in the principal

canal ports they will be in readiness for use by the time the Barge Canals are in operation. We are to have an illustrated talk by the Hon. John A. Benschel, State Engineer and Surveyor, on the progress in Barge Canals and terminals and the present status of the work. From such observation as we have been able to make of Barge Canal construction I am of the opinion that the work on many of the contracts is completed and on others fairly well along, and in most instances appears to have been satisfactorily done. There may be a few localities where unforeseen obstacles have arisen, such as encountering deposits of quicksand and other soft materials, that did not appear on the surface and these may cause trouble when the water is let into the canals for operating purposes. In a work of such magnitude, of approximately 450 miles in extent, more than three times the length of the Panama Canal, it is surprising that there have not been more difficulties encountered and that the work is as well along as it appears to be. We shall have a better understanding after Mr. Benschel's illustrated talk on Barge Canals, before the conclusion of this convention.

In this connection we are to have a paper by E. Platt Stratton, Supervisor of the American Bureau of Shipping, on Canal, Inland and Coastwise Transportation, which I trust will answer the question, often propounded, as to the character of vessels best adapted for Barge Canal transportation. This is to be an original paper, specially prepared for this convention, by the most noted expert on shipbuilding in this country, and we are most fortunate in having Mr. Stratton as a member of our Executive Committee.

To a majority of the citizens of the State the commercial aspects of waterways undoubtedly appear as the predominating utilization to which they may be put and Mr. Stratton's paper on the character of vessels adapted to artificial inland and coastwise traffic, now that the Barge Canals are nearing completion, is timely, and will undoubtedly be illuminating. From the time of the first aboriginal occupation of the territory within the confines of this State, its natural, and later its artificial waterways have been the highways of trade and travel and have contributed widely, continually and most potentially to its agricultural, industrial, mineral and commercial development, until the various complex activities of the State have assumed the proportions of those of an empire.

It will be an easy matter to enlarge upon the importance and scope of these activities that contribute in innumerable ways to the general welfare of the people, but time will not permit an elaboration of these matters. I will content myself with quoting from my work, entitled "Waters and Canal Construction in New York State," in relation to one of its activities only, the following sentence:

"The commercial supremacy of New York over that of other states is builded on a broad, intelligent and progressive policy, conceived of and formulated through the years by gifted, far-seeing, public-spirited citizens, *qui possunt rerum cognoscere causas*, and put into practical operation, through the indestructible energy of the enterprising people, who have from time to time constituted the State."

This illustrates the predominating constructive policy of the leading citizens of the State from its Colonial era to the present time; and in whatever direction their activities may extend, they are dominated by the same intelligent, skilful, far-seeing energy that has made New York the Empire State of the most progressive nation in the world.

The wide range of subjects that will be presented to the members of this convention, by speakers expert in the subjects considered by them, illustrates the value and importance of such an organization as this in a State whose waterways and water resources and possibilities are capable of far greater development and much more extensive utilization than have heretofore been realized, and in the no distant future must be utilized to promote the agricultural, industrial and commercial development of the State. The general interest manifested in this and other countries in all waterway matters is a hopeful sign of the times. With the increase in the cost of coal and other operating expenses of railroads, the time is not far distant when the larger

and coarser freights will be relegated to transportation by waterways, as not only the most economical, but the only means for such transportation, by reason of the necessary cost of railway carriage. Traffic managers understand this, and are no longer waging unceasing war upon all waterway traffic matters. They appreciate that the lighter and more costly classes of freight are increasing in such volume, and are so much more remunerative than the coarser freights, that they are preferable, and now fully tax the carrying capacity of railways. The railway tonnage in the State of New York probably exceeds 150,000,000 tons annually, whereas the intrastate water-borne commerce on the improved Barge Canals and other lateral waterways may not exceed 25,000,000 tons per year, and by the time such waterways are in operation, the gross tonnage of the State will have increased to such an extent as to exceed the tonnage possible on its waterways. But they are absolutely necessary to handle such coarser tonnage, consisting of agricultural, mineral and other freights, that must be assembled for the markets or for manufacturing purposes, in order that the agricultural and industrial interests of the State may be promoted.

All these phases of the subject will be presented by speakers who are on the program for this convention, and I need not elaborate upon these matters any further. This Association was represented by a hundred or more members at the Ninth Annual Rivers and Harbors Congress held in Washington, D. C., in December, 1912, and took part in the proceedings of that national organization. Some of our members read papers and made addresses which will appear in the forthcoming report of that organization, and your President has served for three years as a member of its Committee on Resolutions. That committee formulated the final resolutions as they will appear in the report of the proceedings of that convention, including the important resolution in reference to the creation of a Department of Public Works, which was introduced by your President, and adopted by the convention. I regard this as a step that must sooner or later be taken, in order to bring river and harbor improvements under the supervision of a departmental head responsive to public sentiment as expressed from time to time in relation to various waterway improvement projects. Some of these projects that are advocated in the several states may encounter the paramount authority of the United States government, under the commerce clause of the Constitution, in case it were to exercise such authority in the interests of navigation, as was done by an act of Congress approved on March 3, 1909, making an appropriation for the improvement of the channel in the St. Mary's River, whose constitutionality was recently sustained by the Supreme Court of the United States in the celebrated case of the United States vs. Chandler-Dimbar Water Power Co. et al., 229 U. S. 53, wherein the court held that the riparian owner of the bed of the river to the middle of the stream was not entitled to compensatory damages for structures and water powers included in the improvement of that river for navigation purposes. The court said, in substance, in answer to the contention that the structures of the Water Power Company in the river were taken, that title thereto is absolutely subordinated to the right of navigation, and no right of private property was invaded in the taking of the structures within the waters of St. Mary's River, for Congress had determined that the stream, from the upland to the international boundary, was necessary for the purposes of navigation, and that determination operates to the excluding from the river forever the structures necessary for the commercial use of the water power; and the court denied any damages to such company for anything included in the improvement outside of the shore line. The court said:

"The government had dominion over the water power of the rapids and falls, and cannot be required to pay any hypothetical, additional value to a riparian owner who has no right to appropriate the current to his own commercial use."

The law so established by the Supreme Court of the United States may be applicable to the Long Sault, and other water powers in the St. Lawrence, as well as those in the Niagara, in case Congress were to exercise its paramount authority to include any of such water powers in navigation improvement projects.

The Supreme Court of the United States has also affirmed the decision of the Court of Appeals in the case of *Lewis Blue Point Oyster Cultivation Company vs. Briggs*, as reported in 198 N. Y. 287, and under the same title, reported in 229 U. S. 82. In substance, the court held as follows:

“The owner of the legal title to land under the water of Great South Bay, whether derived from the State of New York, or from royal patents antedating the State’s right, has no such right of private property therein as entitles him, or his lessee, to compensation for the taking or incidental destruction of an oyster plantation thereon by the dredging of a deep water channel across the bay by the United States, in the interests of navigation.”

This same rule may be applied to all the lands under the navigable waters along the south shore of Long Island, where it is proposed to construct a coastal canal. The general rule in this State as to the rights of riparian owners has been recently applied by Judge Haight in an opinion submitted to the Board of Claims in the case of the “First Construction Company of Brooklyn, Claimant, vs. The State of New York,” in sustaining the constitutionality of chapter 491 of the Laws of 1894, granting lands under water to an upland owner on Gowanus Bay, which lands were subsequently filled in out to the bulkhead line as established by the Secretary of War, and which lands are now being taken for a Barge Canal terminal in Brooklyn. This last opinion, as well as the decision of the Court of Appeals in the case of the *Fulton Light, Heat & Power Company vs. The State of New York*, 200 N. Y. 400, is very important in determining damages for property taken for Barge Canal terminals, or for canal construction in the State.

The expense of the Barge Canals will be somewhat increased, owing to the decision of the Court of Appeals, in the case of *Lehigh Valley Railroad Company vs. Canal Board*, 204 N. Y. 471, throwing the expense of the alteration and reconstruction of railroad bridges onto the State. But I must not burden you with the citation of further decisions of the courts, and have called attention to these merely that you may understand their bearing on waterway matters, rights and properties falling within the scope of matters considered by this Association.

I take this occasion in advance of the presentation of the various speakers to express my personal appreciation to them for their acceptance of invitations to speak at the sessions of this convention, and for the time that they have necessarily taken in preparing therefor. I can readily appreciate that this has not been an easy matter, but it indicates a deep interest in matters of vital importance to the State, and their only reward will be the satisfaction of having performed a *quasi* public service in calling attention to matters that make for the common weal.

PRESIDENT HILL: Now, gentlemen of the convention, we are having a roll-call of a list of delegates prepared, and before we announce the committees I desire to consult the roster of this convention, in order that we may have the widest representation possible on committees that are to be appointed. The roll-call was proceeded with last night as far as possible, but it is not complete, and with your indulgence I will endeavor to announce the committees immediately after our session this afternoon. That will give me time to complete the list, which it has been impossible for me to do up to this hour. If there are any resolutions to be presented, we will now entertain their introduction.

GEORGE CLINTON, Sr., Buffalo: In the ordinary course of business it is customary to appoint a Committee on Resolutions, to which all resolutions are referred without debate, the movers of the resolutions having an opportunity to appear before the committee. I, therefore, move you that the President do appoint a committee on resolutions, and that all resolutions introduced stand referred to that committee without debate. The number of members I would leave to the discretion of the Chair.

There is an additional reason for making this motion at this time, and that is this: The work of that committee is somewhat arduous and requires a great deal of time, and it should be appointed as early as possible, in order that it may get to work. The committee is expected to crystalize the sentiment of this convention in specific form as to particular propositions, in order that we may have, when we go to Washington, some plan upon which we can work unitedly.

S. C. MEAD, New York: I take great pleasure in seconding that motion, particularly in view of the fact that efforts to obtain the co-operation of New York State's own Representatives in Congress are made far more effective by having a concrete thing or things to ask of them. As I understand the purpose of the motion, it is that this committee on resolutions shall pick out and report to this convention for approval and adoption by this convention, the basic, concrete propositions in which Federal aid is required in improving the waterways of this State.

MR. CLINTON: That is the idea.

The motion was carried.

PRESIDENT HILL: The Constitution provides exactly what that committee shall do, and it will cover not only National but State projects.

MR. MEAD: Does that mean that the committee would not differentiate as between the two?

PRESIDENT HILL: Certainly.

MR. MEAD: It seems to me to be essential that they should, in order that when we go to Washington, we may have a definite, concrete proposition in which only those matters in which Federal aid is necessary shall be included.

PRESIDENT HILL: I have the committee partly made up in advance. Of course, the Constitution requires that they be appointed, but I want a little more time to run over the roster and see who is here before I announce the full committees, if I may have it. In the meantime, are there any resolutions to be presented, or propositions to be considered?

Resolutions were presented as follows:

RESOLUTIONS.

By John D. Kernan, Utica, connection between the Barge Canal and the coal fields of Pennsylvania.

By Hon. Charles F. MacLean, New York, committee to consider practicability of water connection between the St. Lawrence River, Lake Champlain and the Hudson River.

By James T. Hutchings, Rochester, utilization of Western Wide Waters for Barge Canal Harbor at Rochester.

By Capt. E. A. DesMarets, College Point, for upbuilding of the United States merchant marine.

By Captain DesMarets, as to Panama Canal tolls.

By Captain W. C. Clark, New York, opposing disposition of canal lands by the State.

By Nelson B. Killmer, Brooklyn, construction of Flushing-Jamaica Canal.

By Louis Jaeger, Greenport, Long Island, inland waterway.

By Frederick W. Cameron, Albany, favoring 26-foot channel in the upper Hudson.

By Howard D. Hadley, Plattsburgh, favoring development of waterways that connect the United States and Canada.

By Charles E. Reid, New York, favoring complete and comprehensive plan for the improvement of the Harbor of New York.

By Charles F. MacLean, New York, urging upon Congress the necessity of immediate completion of the various projects pending in the State of New York.

By James T. Hutchings, Rochester, favoring the improvement of the harbor at the Port of Rochester (Charlotte).

By Charles F. MacLean, thanks to Governor Glynn.

By George Clinton, Buffalo, urging early completion of Barge Canal and Barge Canal Terminals.

By Mr. Clinton, approving the Burd amendment.

PATRICK W. CULLINAN, Oswego: I move you, sir, that the rules of the Assembly be declared to be the rules of procedure for this convention, as far as they are applicable.

MR. KILLMER: Second the motion.

The motion was carried.

The annual report of Treasurer Olin J. Stephens, New York, which had been audited by a committee composed of Edward N. McKinney, Albany, Chairman; Edward W. Douglas, Troy, and Dell L. Tuttle, Buffalo, was presented, and, upon motion, received. The return of Mr. Stephens to New York was necessitated by illness before the report was presented.

Patrick W. Cullinan, Oswego, moved that the officers of the Association and the members of the Executive Committee constitute the delegation from the New York State Waterways Association to the tenth National Rivers and Harbors Congress, to be held in Washington on December 3rd, 4th and 5th, and that the President be empowered to name such other delegates as may seem desirable. The motion was carried.

PRESIDENT HILL: The question has often been propounded, but, I think, up to the present time never answered, as to the character of vessels best designed to navigate the canals and inland waters and coast-wise waters of this country. The foremost authority on that subject, E. Platt Stratton, Supervisor of American Bureau of Shipping of New York City, who is unable to be present on this occasion, has submitted his paper, which will be read by S. Christy Mead, Secretary of the Merchants' Association of the City of New York. I am very sorry that Mr. Stratton, who, you will remember, was with us last year, is at present in Washington, called there yesterday on a matter that he could not defer. We will now hear his paper read by Mr. Mead.

CANAL, INLAND AND COASTWISE TRANSPORTATION.

Mr. Mead read:

As the time approaches for the opening of our State Barge Canal, interest increases on the part of those who are to furnish the means of transportation through it, and more particularly in the form, type or character of boat that can be best supplied to meet all the requirements incident to the conditions of navigation over the very extended routes or lines which this great State waterway will connect or open up between the head of navigation at the western extremity of Lake Superior and the southern end of Lake Michigan at Chicago, to tide water and the sea; thence along or through the sounds, bays and their tributaries at the coast to the various points of distribution that may offer the best or most advantageous markets for the consumption and distribution of any cargo of whatever kind, whether of the mine, soil, forest or manufactory. For it is to be borne in mind that this great waterway is to offer all the advantages of the lowest known cost of transportation between the seacoast and eight of the most important and highly developed States of our entire national system.

The controlling factor in cheap transportation is found largely in the size of the unit constituting that method of transportation and its means of propul-

sion; for when the limit of time, or the time of fixed deliveries, is eliminated, no method of transportation for distances of 250 miles and upwards, has ever equalled the low cost of transportation by the American schooner, which is now being fast superseded by the tow barge, of like or larger proportions than its kindred competitor. The schooner is rapidly disappearing because of the unreliability of the time of its cargo delivery and the high insurance rate involved. In other words, the seagoing tow barge is superseding all other means for reliability and cheapness in water transportation, more particularly in units of 1,000 tons and upwards, which is a condition that is now recognized by the general government by the enactment of a statute approved May 28th, 1908, requiring the hull of every sea-going barge of 100 tons and upwards to be inspected at least once in every year by the local United States Inspectors of Steamboats, who are to satisfy themselves that such barge is of a structure suitable for the service in which she is to be employed, has suitable accommodations for the crew, and is in a condition to warrant the belief that she may be used in navigation with safety to life. A certificate of inspection is then to be issued under sections 4421 and 4423 of the Revised Statutes. The United States Commissioner of Lighthouses, the Supervising Inspector-General, and the Commissioner of Navigation under the Secretary of Commerce are constituted a board in perpetuity to fix regulations limiting the length of hawsers between towing vessels and sea-going barges within any of the inland waters of the United States, and such regulations, when approved by the Secretary of Commerce, have the force of law.

It will, therefore, be seen that the barge anticipated for use on the State Barge Canal, by its size and capacity, will have to be a boat of recognized efficiency for the transportation of crew and cargo under all conditions, and in no sense a canal boat, which can only be used in quiescent water for canal and light river service, if under 100 tons burden.

The matter of propulsion of whatever type of vessel we consider acceptable, whether propelled by steam, fuel gas, or fuel oil; single, compound, triple expansion, or internal combustion engines, the fuel expenditure will be commercially about as follows: Steam with compound engines, $2\frac{1}{2}$ pounds of coal per horse power per hour; steam with triple expansion engines, 1 1-3 pounds per horse power per hour; fuel gas, which can hardly be regarded as thoroughly commercial as yet, about 1 pound of coal per horse power per hour is claimed for it; while fuel oil, used in internal combustion engines, one-half pint, or half a pound, of oil per hour per horse power is accepted as possible, but can hardly be regarded as a thoroughly commercial result under all conditions.

It should be noted that from the introduction of both fuel gas and the direct combustion of fuel oils there is much to be expected to encourage the belief that by 1915, when the State's Barge Canals will have been completed, modern engineering will have secured a commercial result that will enable us to obtain under all conditions a horse power from half a pound of oil or on a probable weight of motor of not more than 100 pounds per horse power, developed at the shaft or propeller.

From a blueprint issued from the State Engineer and Surveyor's office showing the sizes of boats that can be accommodated in the locks at a single locking as follows:

1st. Six boats of 98' long x 17' x 10' deep, 240 tons each, equalling 1,440 tons in all, these dimensions being those of the boats now in use on the canals.

2nd. Six boats of 100' x 22' in place of 17', as in the old boats, 10' deep, 550 tons each, or 3,300 tons in all.

3rd. Four boats of 150' x 22' x 10', 825 tons each, or 3,300 tons.

4th. Two boats of 300' x 22' x 10', 1,650 tons each, or 3,300 tons.

5th. One boat of 300' x 30' x 10', 3,000 tons.

These dimensions show the displacement of boats on a given draft of ten feet, which, I assume, includes the weight of the boats at the draft given, and must prove of value to the people of the State in advance of the completion of

the canal, as a basis for transportation interests to work upon in designing the coming barges, whether of wood or steel.

Some of my distinguished hearers incline to the belief that this great State waterway traffic will in the future, as it has in the past, be handled in three separate classes of boats, namely, canal, lake and coastwise vessels, which would necessarily involve three separate breakings of bulk or loadings and unloadings, assuming the line of transit to be over lakes, canal, and coastwise. Our canal system should in every way possible anticipate one continuous method of transit as far as possible in boats of the largest possible size and greatest draft that can safely be accommodated. To do this, the boats must be of modern construction, of either steel or wood, for both types will be resorted to, and must possess stability and endurance enough to deal under all adverse conditions of lake, bay or sound navigation, and be able to transport dry and perishable cargoes safely along the seaboard, after having passed through the entire lake and canal system.

Many of the ideas herein enunciated are not altogether new or really original, for there is now in existence a fine object lesson on a much similar field, which completely illustrates the commercial results likely to be attained in lake, canal and coastwise navigation. I refer to the Southern Transportation Company of Philadelphia, to whom the writer is indebted for kind permission and authority for his quotations herein referred to. The gentlemen composing the officers and directors of this company were primarily engaged in the wood pulp and paper manufacturing business, which necessitated their owning and operating barges and tugs in the transportation of their own raw materials and manufactured products through the Delaware & Chesapeake Canal, and whenever their own extensive business permitted they chartered some of their barges in general transportation, which resulted in their constructing and equipping their fleet in such a manner that when the canals were closed, their vessels could be safely navigated on short coastwise routes and in the open sea, if necessary. These conditions soon carried them into a general transportation business, chiefly on the Chesapeake and Delaware bays and the rivers and sounds therewith connected as far south as Washington, Richmond and Norfolk, and thence through the canals extending further south into North Carolina. This company now has in the most active operation and under the finest management about eighty barges and a fleet of some twelve tugboats, all built and maintained in rigid compliance with the requirements of the United States statutes previously referred to. To accomplish this the company found it necessary to build their barges on an absolutely flat floor, and with comparatively square bilges, similar in shape to ordinary canal boats, in order to give a maximum carrying capacity when in the canals, and also to insure sufficient rigidity to endure when heavily loaded in the open sea. To accomplish this resort had to be made to what is now known in wood construction as log bilges, the floors of such vessels extending in continuous timbers across the keelson from bilge to bilge, where they abutt and dove-tail into heavy longitudinal timbers, the side timbers being similarly fastened at the bilge, all of which tends to give such vessels one center and two heavy side keelsons, one at each bilge, together with great longitudinal and vertical strength, and the increased carrying capacity incident to the square bilge, without any loss of strength for service when used in the open sea. In this connection it may be of interest to know that this company owns its own shipyard, and builds such a barge 196' long, 23' 10" wide and 12' deep every month of the year for its own use.

It should be noted that during the season of canal navigation the Delaware & Chesapeake Canal furnish a connecting link for an extensive commerce between these two great bays in much the same manner as our State canal will be the connecting link between the commerce of the Great Lakes and the seaboard, at either end of which the commerce far exceeds during the season of navigation, or in seven months of the year, the entire navigation of the Suez Canal in a whole year, with the entire traffic of Europe at one end and that of India and China at the other.

PRESIDENT HILL: We are all proud of our American families that can succeed for three or four generations. We are all familiar with the achievements

where the continuity of family life is perpetuated, as in the case of the Adamsses in Massachusetts, the Abbotts in New York, but first of all will ever be the name of the Clinton family in this State. Howsoever much we may in this later day put into constructive statesmanship, in comparison with the opportunities and conditions confronting the great DeWitt Clinton, we must concede that his achievement forever settled the question that New York should be, and always will be, the Empire State of the Union. (Applause.) It is with great pleasure that we are now to listen to the great-grandson of the greatest Governor New York ever had, George Clinton, Jr., of Buffalo.

EFFECT OF THE BARGE CANAL ON COMMERCE.

MR. CLINTON, JR.: Mr. President and Members of the Association: The somewhat flattering introduction just received may not be borne out by the remarks you are about to hear, but I trust that if they do not entirely meet with your expectations they will give rise to some pregnant thoughts.

The title which I have chosen for this talk is one which is perhaps rather broader in scope than the talk itself will prove to be, but that is due to the difficulty of compressing within the limits of a mere title an accurate definition of the subject matter of such a paper as the present. I do not purpose treating at length or in full detail the entire subject of the relation of the Barge Canal to commerce, since to do so would far exceed any time which the Association might find itself able to follow me and would, I fear, exhaust your patience long before its reading had been completed. This paper, then, will be confined to treating some of the probable commercial advantages to be derived by the public from the Barge Canal upon its completion.

I do not purpose troubling you with statistics, or indeed figures of any kind except where required for purposes of illustration, because, in the first place, many of you are more familiar with them than myself and in the second place, they will be handled more ably and to better advantage by other speakers before the adjournment of this convention, but in order to fully understand the subject and to draw just conclusions with respect to the future, it will be necessary to go to some extent into the past history of the canals of the State, for only by so doing can we predict with any assurance what the future will bring forth.

The Erie Canal was completed in 1825. At that time the population of New York City was about 125,000, of Buffalo a trifle over 2,000, and of the State about 1,500,000. This million and a half of population was chiefly at the eastern end of the State along the Hudson and Mohawk valleys, the central and western portions of the State being but thinly populated. Prior to the construction of the canal there was comparatively little trade moving east and west through the State, the difficulties of transportation through the then undeveloped country being so great as to render the expense almost prohibitive as compared with the easier water route to Montreal. In fact we are informed that the average cost of transporting a ton of freight from Albany to Buffalo prior to the opening of the canal was \$100. This perhaps is a trifle misleading if we compare this figure directly with present day figures, as that sum was calculated in a somewhat depreciated currency, but even with due allowance for that fact it is obvious that the cost of transportation was so great as to prove a serious handicap upon the development of the central and western portions of the State, especially as the cost by the Canadian route from Montreal was about one-third less. Furthermore, the facilities for transporting freight were entirely inadequate to accomplish any large movement of goods in either direction. Dependence was placed at first upon the Indians with their canoes, who ascended the Mohawk crossed by a portage of a few miles to Woods Creek, thence to Oneida Lake, the Oswego River and Lake Ontario. The largest of these canoes could carry only about three tons besides the men necessary to navigate. At a little later period batteaux were used, the breaks in the chain of water communication being overcome by portaging. This latter method of transportation, however, covered only a portion of the distance from Albany to the western limits of the State.

Even before the completion of the canal its effects began to be observable along those portions of it which had previously been opened for navigation and upon the opening of the entire canal commerce advanced by leaps and bounds. The development of the central and western portions of the State progressed with unexampled rapidity, the chief and controlling reason being the immediate and tremendous reduction in the cost of carriage of freight between the two extremities of the State, that reduction being approximately 90 per cent., or from about \$100 per ton to about \$10 per ton.

It is not my intention to inflict upon you a history of the canal, but some allusion to the period of depression culminating in the improvement of 1895, will be of advantage as it has a direct bearing upon our subject matter. In the forties railroads as a means of transportation began to make themselves felt. Their influence grew steadily. In the early eighties the railroad systems of the United States transporting freight to the eastern seaboard were profoundly affecting transportation upon the canal and in the period which followed, the commerce of New York, both the State and the city, suffered severely in consequence of agreements among the through lines for what are called differential rates. It was peculiarly unfortunate for the canal system that competition with the railroads coincided in point of time with the ever-threatening competition by the Canadian water route, the Welland and St. Lawrence River Canals having been improved or completed by this time. The result was that the high water mark in canal tonnage was reached in 1880. Since that time there has been a decrease in canal tonnage varying in successive years, but which is now considerably less than in the year last referred to. Prior to that date, however, when the disturbing elements of railroad differentials and the competition of the Canadian route were not exerting their full influence as they did thereafter, the annual increase in canal tonnage had been large and continuous.

With this introductory matter in mind we can proceed more intelligently to a consideration of the probable effects of the completion of the Barge Canal upon commerce.

These effects, whatever they may be, will be chiefly due, at least so far as concerns us, to the great reduction in the cost of transportation which is certain to follow. This makes the situation analogous, though not precisely parallel, to the situation presented by the original construction of the canal. It has been figured that the actual cost of transporting a ton of freight over the Barge Canal between Albany and Buffalo will be 26 cents, making the cost per ton mile about .52 mill. This estimate is probably too low, but the cost will be little, if any, above .65 mill per ton mile. The cost of transportation upon the present canal is about .80 mill per ton mile. It is understood that these figures relate to cost of transportation and not to the charges actually made, which differ very widely therefrom.

This great reduction in the cost of transportation will be a direct result of the opening of the Barge Canal. Other direct results will be the opening up of communication with other places, both in and out of the State, with which we have not hitherto had communication available commercially, or the communication with which has not been as free as is desirable. A striking example of this is to be seen in that part of the State which borders on Lake Champlain. If I may be allowed to indulge in a little prophecy I will venture to say that with the iron ore and limestone which are very near at hand and the cheap coal which will be made available by means of the Barge Canal, the iron industry along the shores of Lake Champlain will develop in a manner not now realized. Another instance of what I mean by the opening up of communication is to be observed in the Atlantic Deeper Waterways Association's plan for intra-coastal canals along the Atlantic coast. If this plan should be carried out direct communication by barge may be had between all the Atlantic seaports and the cities bordering on the canal. This subject will, however, be more fully treated by others and I will not trespass upon your time by further discussion of it.

The chief factor in estimating the results to be anticipated from the opening of the Barge Canal is, however, the great reduction in the cost of transportation. Results, both direct and indirect, will flow naturally from that cause.

Among the direct results the most important perhaps is the fact that the cheap transportation to be afforded by the canal will place the city of New York in a position where it can successfully compete with other Atlantic seaports for the export trade in spite of the discrimination which has been exercised against that city by the through railroad lines through the instrumentality of differentials. You all know that for some years back New York City has not been getting its share of export trade, that is to say, its export trade has not been increasing proportionately with that of other seaports and it has not been getting the share of the export trade to which its natural situation, uninfluenced by the drag of differentials, would entitle it. This is not a matter which concerns New York City alone. It concerns the whole State and indeed the whole country for cheaper transportation to New York of products coming from the West will necessarily mean a reduction in the rates for transportation to other seaports and thus not only New York, but the whole country would reap the benefit.

Another direct benefit to be expected is the increase in the use of the canal for local traffic. For many years after the construction of the original Erie Canal, it was largely used for local traffic, especially for the carrying of farm products to market. As an example of the change in conditions brought about by the construction of the Erie Canal, I may cite the fact that in the year 1819 wheat raised in Genesee county brought 30 cents a bushel. A year later, after the completion of the canal, it brought \$1 per bushel, the change being largely if not wholly due to the reduction in the cost of getting it to market. The use of the canal for local traffic has of late years fallen off so that at the present time local traffic constitutes a comparatively small part of the business transacted upon the canal, but it is to be hoped and expected that upon the completion of the Barge Canal, with its low cost of transportation, its large and modern barges assuring safety to cargo and its freedom from annoying delays, merchants and farmers along the line of the canal will see the advantage of using it for the transportation of their goods. This may, perhaps, especially in the case of farm products, even affect favorably the high cost of living.

The foregoing advantages are surely great and with them accomplished the wisdom of the expenditure made by the State for the construction of the Barge Canal would need no argument, but the indirect results which are to be anticipated are even greater and more far-reaching. The first of these and that which is most obvious is the large increase of traffic which will unquestionably take place. I say unquestionably, because all experience goes to show that where a trade route is opened up, it accomplishes much more than being a mere channel of communication; it creates trade. The explanation of this is easy. Transportation is as much an element in the cost of manufactures or natural products as the labor and materials which enter into them. Therefore, where a cheap trade route exists leading to a market where goods can be profitably sold, manufacturers will, other things being equal, naturally locate their plants on or near that route, so we may expect that the Barge Canal will not only stimulate and thus increase existing commerce, but it will create new commercial enterprises which themselves will greatly increase the traffic upon the canal. I have already alluded briefly to the Champlain district, but that is merely one instance of what may be expected to occur at different points along the canal. With cheap coal from Pennsylvania and cheap ore from the upper lakes there is no reason why blast furnaces should not be established in the central portion of the State to great advantage, particularly as the third great requisite for that industry, to wit, limestone, is near at hand. The fact that transportation routes create commerce, is indeed almost a truism, and as the population of the State increases by reason of the increase in traffic, new industries will be required to supply the increased population, and these new industries will in their turn support the tendency to the increase in population and commerce.

An important effect of the reduced cost of transportation on the Barge Canal will be the control of railroad rates. You are all familiar with the fact that the Erie Canal, even at its worst times, controlled and still controls through railroad rates from the West to the Atlantic seaboard, by the threat of competition, which its existence implies. That is a fact conceded by railroad men

themselves. That threat of competition will be much more effective in the case of a canal on which the cost of transportation is .65 mill per ton mile, than on the present canal where that cost is .80 mill.

For some years past the cities of Buffalo and New York have been losing the benefit of through shipments of grain for export from the west. This has been touched upon in alluding to New York City's loss of commerce, but it affects Buffalo also, that being the transfer point for grain cargoes coming from the upper lakes, and any thing which largely affects New York City and Buffalo is felt throughout the State. A large part of this grain is being diverted to Montreal by the Canadian water route. The Barge Canal will bring it back.

The increase of the commerce, the building up of new industries, the increase in population and the existence of a cheap transportation route will largely increase the values of property lying along or near the canal, thus adding to the wealth of the State and the prosperity of its citizens.

To summarize, we may expect as direct results of the opening of the Barge Canal the following: Cheap freight rates, the opening up of new trade channels, an increase in local traffic, the restoration of New York City's supremacy over other Atlantic seaports, lower railroad rates, increased population for the State, the building up of new industries within the State, restoration of the through grain trade to Buffalo and New York and increased value of property on or near the canal.

The benefits recited are surely great enough to warrant great care in securing and preserving them, but a word of warning will not be out of place. All who have the commercial prosperity of the State at heart must guard the canals with unceasing vigilance and see that they are preserved in their entirety for canal purposes and for canal purposes only.

PRESIDENT HILL: The next address was to have been made by Mr. Witherbee. I do not see him in the hall. I do not know whether he has made any preparation to have his address transmitted to us.

HOWARD D. HADLEY, Plattsburgh: I have a letter from him, which states that he was obliged to go South. He is not well, and he could not be here to-day.

PRESIDENT HILL: Mr. Witherbee's acceptance was conditional upon his ability to be here, and the exigencies of business matters and the state of his health. I regret that we shall have to forego the pleasure of hearing him this year. In getting up a program of this sort we were unable, and so were the speakers, to tell six weeks in advance what might happen. Mr. Witherbee has not been in very good health, and I am very sorry he could not be with us on this occasion.

EDWARD N. McKINNEY, Albany: At this time, on behalf of Mr. Kiernan, president of the Chamber of Commerce, I want to extend to this gathering an invitation to take luncheon at the Hotel Ten Eyck this noon. This lunch will be absolutely informal, no cards will be required, and the intention is to keep the members of the convention together, and to have a sociable time. Mr. Kiernan would have extended the invitation in person, but he has gone to the Ten Eyck to make arrangements. This is an informal gathering, and has nothing to do with the formal luncheon to-morrow.

PRESIDENT HILL: I am sure this is a delightful surprise, and is only another indication of the hospitality for which Albanians are famous.

I think we can announce in the morning the members of the Committee on Resolutions.

We are going to advance our program, instead of being behind it. Congressman Bennet's paper, entitled "The New Project of New York Harbor Development and What it Means to the State," will now be read by the Secretary of the Association.

NEW YORK HARBOR DEVELOPMENT.

The Secretary read:

The subject assigned to me is one of great importance, particularly as it gives a chance to emphasize the essential community between the city of New York and the great areas of non-urban territory between which and the city there is a condition of mutual interdependence too infrequently realized.

An orderly presentation of the case requires, first, a statement of what the new project for New York Harbor development is, and the state which it has reached, concisely. The project recommended comprises a through channel 35 feet deep through the entire East River, including Hell Gate and into Long Island Sound; a 30-foot access to East River wharves on both sides of the river as far north as Queensboro Bridge, excepting for the area covered by Shell Reef, which is to be removed to a depth of 25 feet; a 20-foot access to wharves east of Blackwell's Island, the removal of Corlears Reef, of Rhinelanders Reef, and Port Morris Shoal, and the completion of the channel between North and South Brother Islands, and the channel south of South Brother Island. The improvement previously recommended for the Harlem or Bronx Kills contemplates a channel 300 feet wide and 18 feet deep. The construction, both in the Kills and in the East River, is to be along the lines of Colonel Black's recommendations.

It will be noted that, so far, there is simply a favorable recommendation from the Secretary of War, but this is a very important step, as Congress never acts on a project of this size without first receiving a favorable recommendation from the War Department. No doubt the next step will be to obtain from Congress the approval of the project and the authorization of appropriations for it, and, after that, it will be in order to obtain the annual appropriations as they are needed, which, if the authorization is once obtained, will not be especially difficult.

The conditions which the adoption of this project will remedy are those conditions in the East River such as shoals, submerged rocks, dangerous reefs, etc., which have rendered the foreshore of the East River inaccessible to modern vessels. The conditions in the East River have been such that the dangers and uncertainties of navigation, even on the main channels, especially at Hell Gate, have combined to minimize the usefulness of one of the main entrances to the port, and its foreshore. Naturally, this disproportionately enhances the attractiveness and value of the west side of Manhattan.

As one stands on the roof of a high building near the Battery and looks north, he needs no especial expert training to be able to see that there is full freedom of navigation in the Hudson River, and restriction of some sort on the East River. Northward on the Hudson River are great modern piers, as far as the eye can see, and huge steamers lie in the berths. There is no other city with which I am acquainted which presents a similar spectacle. Turning the eyes to the East River, the piers are inconspicuous, and the vessels which lie in the berths, of absolutely a different class from those which lie in the North River; and yet, the East River is the natural channel and gateway for the enormous waterway commerce to New England, and, if properly improved, just as much a gateway of ocean traffic as the North River.

If the wharves on the Hudson River were sufficient for the commerce, the condition of the East River, though regrettable, would be of interest chiefly to the owners of property adjacent to the piers, but the fact is, that since 1898 commerce into the port of New York has increased 133 per cent., while during the same period the wharfage facilities have increased less than 30 per cent.

The New York shore of Manhattan is now fully utilized, and the improvement of the East River becomes a pressing necessity, unless we are to consent that the traffic into New York shall be limited not by the demands of commerce, but by the wharfage facilities which we can offer, and, therefore, to further consent, while we sit idly by to see our commerce driven by the necessity of the case to Norfolk, Baltimore and Philadelphia on the south, and to Boston on the north.

The request for this \$15,000,000 appropriation is not at all disproportionate to the traffic of the port or to what has been expended by the general government in our harbor development. Much more than one-third — more nearly one-half of the total waterborne commerce of the United States, is conducted in the port of New York. Almost one-half of the entire foreign commerce of the whole country passes into and out of the port of New York. Sixty-two per cent. of the customs revenues are collected at that port. About one-eighth of the manufacturing of the whole United States is within the metropolitan district of New York. It is the one great national gateway for the commerce of the nation, on which account every approach to its harbor should be so improved as to afford the maximum depth and safety for vessels of every known type.

New York has not been unduly favored in appropriations. Since the government was established (see Doc. No. 382, 62d Cong., 2d sess.):

New York Harbor has had.....	\$6,979,622.14
Boston Harbor has had.....	10,402,687.45
Charleston Harbor has had.....	4,925,191.67
Savannah Harbor has had.....	8,443,703.28
St. Johns River, Fla., has had.....	4,813,003.75
Mobile Bay and Harbor has had.....	5,870,652.43
Galveston Harbor has had.....	9,416,934.72
Cleveland Harbor has had.....	6,659,618.31
Detroit Harbor has had.....	9,700,283.05
Oakland Harbor, Cal., has had.....	3,476,769.60
San Pedro Harbor has had.....	2,784,492.20

Certainly this concise statement of our need, of our traffic and of our commerce, establishes the case, while the modesty of our request for appropriations in the past gives added reason for the immediate authorization of the necessary appropriation of the present.

The interest of the State at large in the question is very clear. The growth of the city of New York depends almost entirely upon commerce, including manufactures, and the people who conduct such commerce and manufactures constitute on the one hand a steady and increasing market for the products of the State, and on the other hand, supply the force which, through the exercise of skill, invention, thought and activity, sends into the non-urban portion of the State an increasing number and variety of manufactured products and appliances, to minister to the necessity, the comfort and the luxury of those who pay for such necessities, comforts and luxuries by the products of the soil.

New York State has built itself up by recognizing the interdependence of all portions of the State. We in the cities permit ourselves to be taxed to build great systems of State highways, recognizing that though the waterways are not built in the cities, their addition to the facilities of communication bring us more cheaply and more quickly the products of the farm, and thus minister to our necessity and comfort, and luxury, while adding to the profits of the farming communities. On the other hand, the farming communities have permitted themselves to be taxed for the building of a great Barge Canal, recognizing that the benefits of that canal will go most largely to the cities, and that the constant growth of the cities gives to the farming communities a constantly expanding market. Also, that manufacturing centers which are by their prosperity increased in efficiency, are enabled to produce more, and more kinds, of manufactures to be enjoyed by those who reside on the farms.

Each month the population of the metropolitan district, including Newark and Jersey City, has increased about 17,000. Let us assume that this increase should stop. When it stops, business expansion stops, for the business expansion cannot occur without additional people. When business expansion stops, business stagnation begins, and then the enterprising and the foresighted commence to seek other fields of activity, and with that comes a decrease instead of an increase.

New York city must either continue to expand or commence to contract. It cannot continue to expand unless occupation is provided for those who are to

come, and occupation is almost absolutely dependent upon transportation. This question of transportation is divided into questions of land and water transportation, and the question of water transportation is again divided into those of transatlantic, coastal and inland. There is no desire to minimize or overlook the importance of any of these branches; but the point is, that all of these facilities must be constantly improved to meet the constantly increasing requirements of the constantly increasing population; and, unless it is done, the city loses value as a market for the products of the country, and loses efficiency as a producer of improved manufactured products.

Therefore, the Citizens' of New York Harbor Improvement Committee, which has thus far always and consistently besought the interest and assistance of all the rest of the State in furthering this project of improving the harbor of New York, urgently renews its request for such assistance and support, upon the broad grounds that the benefits which will flow from the improvement will inhere not only to the city of New York, but to the entire State. What will it profit that part of the State of New York outside of New York city if we are unable to improve the East River, and therefore are crippled in increasing our wharfage facilities, and, as a consequence, our shipping is forced to the ports which I have already mentioned. Can the farmer of New York State sell his products with equal facility to the inhabitants of these cities, or will not the diversion of ocean commerce—which, of course, will carry with it the diversion of railroad commerce—act to the advantage of the communities producing farm products, which communities are situated within easy reach of those other ports?

The interests of the country districts which are tributary to New York city and to which New York city is tributary, are identical in kind, though possibly not in degree, and we must bring to the furtherance of this project the same degree of solidarity which always actuates other States in connection with similar projects, and in doing so, and in conclusion, we can then ask the co-operation of other States, for New York, through its Representatives in Congress, has always been unselfish and liberal toward every other portion of our common country. We have never opposed in any way the legitimate development of any portion of the country, realizing that the situation which I have stated, as it relates to the State of New York in its constituent parts, relates in a larger degree also to the United States in its constituent parts, and that the different portions of the country in a larger way are as interdependent upon each other as are the parts of the State of New York.

All that we ask of the rest of the Union is a reciprocal recognition that as we are facilitated in our normal development, so the development of the entire constructive, and our firm stand is, not that New York ought to be preferred above the rest of the country, but that along the lines of development which have come to us legitimately through thrift, through industry, through intelligence, added to those natural advantages which we enjoy, we are entitled to the same assistance from the Federal government as is accorded elsewhere.

MR. REID: As this paper is full of important matter that would be helpful to the Committee on Resolutions, I would move that the paper be transmitted to the Committee on Resolutions.

Motion seconded.

PRESIDENT HILL: Without objection, it will be transmitted to the Committee on Resolutions for their instruction. We will now announce the committees, as far as we can. We have authority to add to the list any names which have been overlooked, and, as other delegates are coming in a little later today, we may desire to add their names. Under our Constitution, as stated in our report, we have a Committee on Resolutions with three sub-committees, each sub-committee having its chairman. Matters that are referred to the Committee on Resolutions will be disposed of by the chairman of that committee by referring such as pertain to navigable waterways to A, B or C, as the case may be; the sub-committees will then consider the resolutions and report back to the full committee. The full committee will then pass on them, and that becomes the report of the Committee on Resolutions. In other words, the action of each

sub-committee, A, B or C, must be submitted to the full Committee on Resolutions and embodied in its report. That eliminates matters not properly applicable to our work and facilitate the work, and it has served very nicely heretofore. The Secretary will read the names of the committees as made out thus far.

The list of committees follows:

Committee on Resolutions: Hon. Patrick W. Cullinan, Oswego, Chairman.

(A) **Sub-Committee on State Canals and Inland Navigable Waterways:** Hon. William J. Roche, Troy, Chairman; Hon. Danforth E. Ainsworth, Albany; S. Christy Mead, New York; Edwin A. Fisher, Rochester; John R. Myers, Rouses Point; Howard D. Hadley, Plattsburg; Frank S. Oakes, Cattaraugus; Frederick O. Clarke, Oswego; R. D. Palmateer, Waterford; John J. Hartigan, Troy; Oscar Smith, Albany; Lachlan Macleay, Oswego; Captain W. C. Clark, Maynard; Frank P. Hoffman, Rochester; Edward W. Loth, Troy; Miles Ayrault, Tonawanda.

(B) **Sub-Committee on Tide Waters, Rivers and Harbors:** Hon. John D. Kernan, Utica, Chairman; Hon. John N. Carlisle, Watertown; Hon. Charles F. McLean, New York; Dell L. Tuttle, Buffalo; Ernest A. DesMarets, College Point; Addison Wheeler, Brooklyn; Edward F. Murray, Troy; W. Fred Silleck, Brooklyn; Samuel E. Hutton, Troy; Louis Jaeger, Greenport; George Clinton, Jr., Buffalo; Arthur H. Jagers, New York; Charles E. Reid, New York; Edward N. McKinney, Albany; Cornelius F. Burns, Troy; Larkin G. Mead, New York; B. M. Stumpner, Brooklyn.

(C) **Sub-Committee on the Conservation and Development of the State's Water Powers:** Hon. George Clinton, Buffalo, Chairman; Hon. Edward W. Douglas, Troy; Hon. George H. Cobb, Watertown; Hon. Frederick W. Cameron, Albany; Hon. Peter B. Kiernan, Albany; Hon. John E. McIntosh, Auburn; Nelson B. Killmer, Brooklyn; James T. Hutchings, Rochester; Col. James M. Andrews, Schenectady; F. A. Emerick, Oswego; C. H. B. Chapin, New York; F. L. Moore, Watertown; Edward R. Taylor, Penn Yan; Samuel C. Tappin, Troy; John A. Rafter, Tonawanda.

Committee on Nominations: Hon. George H. Cobb, Watertown, Chairman; Olin J. Stephens, New York; Hon. T. Harvey Ferris, Utica; Hon. John G. Jones, Carthage; Dell L. Tuttle, Buffalo; Edward Van Kleeck, Waterford; E. A. Niel, Rochester; T. L. Griffin, Troy; Charles E. Reid, New York; Warren L. Bradt, Albany; Robert H. Rogers, Schenectady; Nelson B. Killmer, Brooklyn; Howard D. Hadley, Plattsburgh.

MR. CULLINAN: I had the honor of being chairman of this committee last year and if there are no objections, I would say that it would perhaps be — and we discovered in the action of the committee last year that it was — better for us to meet in a body and then distribute the work to the various sub-committees, with such suggestions as the general committee may make in the premises, and then reassemble for a reviewing of the entire work before we report to the general body, and if there is no objection, Mr. President, I will assume that that method of action will be agreeable to the convention.

MR. CLINTON, Sr.: If the Committee on Resolutions will permit me, I would suggest that definite announcement of the place of meeting be made, and I would ask Mr. McKinney to state for the benefit of the members of the Committee what arrangements have been made.

MR. McKINNEY: I assume that Mr. Coffin, our secretary, can tell you better than I can. I was just informed that tables had been placed in the corridors for ordinary committee work but that room 302 on the third floor in the western section of the building, which is a large room, is available for the committee at any time.

MR. CULLINAN: I will take the liberty of confirming that and will make my announcement later as to when the committee may meet.

MR. MEAD: I wish to call attention to the fact that under the schedule of our program as printed practically all the hours are taken up with the regular program of the convention. In view of the size of the Committee on Resolutions, as read, a meeting of that committee will practically depopulate this hall and we might as well adjourn the convention while that is taking place. What I particularly wished to suggest is that in order that we may have a definite program as to what we wish to advocate at Washington, a special sub-committee of not to exceed five in number, should be created for the particular purpose of presenting the results of their efforts to the committee and report to this body. It seems to me that that is the most important piece of constructive work this organization can do this year and I think that a small committee considering the preliminary work now as a sub-committee of the Committee on Resolutions would ensure that result.

PRESIDENT HILL: I would suggest that under the Constitution, such a course will create some conflict. I suggest that you pursue this course: When the Committee on Resolutions meets, Mr. Mead, you can bring the matter up and matters requiring attention can be sent to a committee that may be appointed then, and not depart from the provisions of the Constitution and so cause conflict, because when the resolutions come in, whether they relate to State or National projects, it is still within the jurisdiction of the Committee on Resolutions.

MR. MEAD: My suggestion was that the chairman of the Committee on Resolutions, to facilitate the work of the Committee, should create a special sub-committee at this time.

PRESIDENT HILL: That is a very important matter and I assume the chairman will take notice of that and when there is a matter of that kind, he will appoint a sub-committee to look after it. Is that agreeable, Judge Cullinan?

JUDGE CULLINAN: Certainly.

MR. CLINTN, Sr.: If I may be permitted, I understand that the meeting of the general committee should take place this evening, for the very reason that the program this evening provides for addresses, together with stereopticon illustrations, that will put at liberty the members of the committee; that is, it will not be necessary for the members of the committee who have this important business on hand to be present at the evening addresses. I doubt whether it would be possible to get a representative meeting of the committee together this afternoon without practically clearing the floor. I say that for the benefit of Mr. Mead.

PRESIDENT HILL: I notice there are only four addresses this afternoon and the session, being called promptly at 2 o'clock, should conclude by 3:30 or 4 o'clock.

Adjourned until 2 P. M.

THURSDAY AFTERNOON.

Convention called to order by President Hill at 2:15 P. M.

PRESIDENT HILL: Last evening the Executive Committee of this Convention not only approved the program but authorized changes to be made therein as circumstances required. One gentleman who is on the program for this afternoon is detained and we are going to make a change when the time comes by advancing from the program for to-morrow one speaker to speak this afternoon in the place of an absentee who will perhaps be here to-morrow, and they will thus simply exchange places on the program.

You are all aware of the fact that the proceedings of this Convention will be published, if we can get funds enough for that purpose, as they were a year ago, and I assume you all have had copies of the proceedings of a year ago.

They reach a very much wider constituency than appears to be represented at our conventions. The proceedings last year were not only sent to all members of this Association, but to all the principal commercial organizations in the State, and copies were furnished to the Department of Education for deposit in the various libraries of this state and other states. So that the good work done here, and that has been done heretofore in this Association, is state-wide and nation-wide in its effects, and I hope equally wide in its beneficial results.

This afternoon we are to hear from the counsel of the State Legislative Committee on Conservation and Utilization of State Water Powers. Mr. Baldwin has given a great deal of attention to the subject of the legal aspects of that matter and we are to have the benefit of his study and the conclusions which he has reached. It is a great pleasure to have citizens like Mr. Baldwin give their time, as he has given it in the preparation of this address, and then in presenting it to us, and all we have to do is to drink it in, as the girl said, you know, who was making her first visit at Venice. She wrote home to her mother that she was finally seated on the banks of the Grand Canal and was "drinking it all in." If we can drink in the solid information which is presented from hour to hour by our expert speakers — and they are such — on the subjects they discuss, I know we will feel amply repaid for attending this Convention.

I have the pleasure now of introducing Hon. Arthur J. Baldwin, who will address us on "The Right of Eminent Domain and Its Relation to Water Storage."

EMINENT DOMAIN AND WATER STORAGE.

MR. BALDWIN: While serving as counsel to the Committee on the Conservation of Water of the Legislature of 1912, I had occasion to consider not only the physical conditions in the State of New York surrounding water power capable of further development, but also the reasons why the further development of such water power seemed to be at a standstill.

On Tuesday of this week there came into my hands through the mail a little circular entitled, "What Every Voter Should Know." It was put out by one of the great commercial organizations of New York City to urge the adoption of Constitutional Amendment Number 4 at the election to be held next Tuesday. The circular starts out with paragraphs entitled respectively, "The Cost of Living," "The Cost of Coal," "A Substitute for Coal," "Vast Resources of Power," "Power Equivalent to Coal," and "The Value of the Wasted Power." After asserting that there is approximately 1,123,779 water horsepower annually going to waste within the confines of the State of New York, it proceeds to estimate the value of that waste. It bases its estimate upon the cost of steam power to manufacturers at \$45 per horsepower per annum, and computes the waste of water power within this State at \$50,000,000 a year. The questions are then asked: "Why this waste? Why has not this power been developed?"

Capitalists understand the possibilities of water power; engineers can with commendable accuracy determine costs and prospective profits; and even the laity, when they see the wheels of industry turned by water power, can appreciate the advantage of conserving this energy now wasted.

The circular in question finds the cause for the absence of further development of our water powers, in the restriction contained in article VII, section 7, of the Constitution of 1894, known as the "Forest Preserve Section," which provides:

"The lands of the state, now owned or hereafter acquired, constituting the forest preserve as now fixed by law, shall be forever kept as wild forest lands. They shall not be leased, sold or exchanged, or be taken by any corporation, public or private, nor shall the timber thereon be sold, removed or destroyed."

The amendment to the Constitution to which the circular refers and upon which we shall vote next Tuesday is commonly known as the "Burd Amendment." It is intended to amend the section of the Constitution which I have just quoted, by providing that not to exceed 3 per cent. of the forest preserve may be taken by the State, under certain conditions, for water storage reser-

voirs. Such amendment, it is considered, will solve the problem and remove all barriers that have heretofore prevented the utilization of this vast energy.

The passing of the Burd Amendment will remove one of the barriers preventing the development of certain water power, but it is not the solution of the problem. I believe the author of that circular forgets that a very small percentage of the water power capable of development and now going to waste is situated within the forest preserve or would in the slightest manner be affected by the passage of the Burd Amendment. None of the land which must be taken for the great Sacandaga improvement is within the forest preserve; none of the land that must be taken for the construction of the Portage dam upon the Genesee River is within the forest preserve; and not all of the land that must be taken for the development of the Black, the Salmon, and the Oswegatchie, is within the forest preserve. The passage of the Burd Amendment will remove one of the barriers to progress, but not the principal one.

There can be but little progress made in the development of these resources without the use of the right of eminent domain, and this right must be extended to those who would develop these now wasted energies of nature. The construction of a great water storage reservoir, of necessity, covers much territory and affects many private interests, and these private interests must be extinguished for the common good. The result can be accomplished only by the use of the right of eminent domain.

A careful analysis made of all the proposed laws that have been before the Legislature of the State for the last twelve years bearing upon this subject of water power development will show an anxiety on the part of the drafters of such laws to use such language as would enable the courts to hold that the storage of water for preventing floods and droughts so affects the public health and safety as to permit of the exercise of the right of eminent domain for their construction on the theory that a public use is involved. While their desire to create water power was the impelling motive, they adopted the subterfuge of public health and safety.

In my discussions of this subject with attorneys, legislators and representatives of civic bodies, I have found a great popular misconception of the true nature of the right of eminent domain as it relates to water storage. And as I see before me many men who I know will be members of the next Constitutional convention, I desire to discuss the question of eminent domain and its relation to this problem, with the hope that when that convention adjourns and its recommendations are adopted by the people, the last barrier to these great developments will have been removed.

We have become so accustomed to considering the right of eminent domain in the light of our Constitution that laymen and lawyers alike have acquired the idea that it would be impossible to give the right of eminent domain to a water storage company as such, except upon the theory that a storage reservoir, because of its prevention of floods and droughts and its consequent effect upon the public health, is a public use. We have unconsciously associated the words "public use" with the words "eminent domain" until they are inseparable in our minds. So in every discussion the statement will be made that the development of water power is not a public use, and, therefore, the right of eminent domain cannot be granted to a water storage company.

We have associated the term "public use" with the term "eminent domain" because of the language of our Constitution. We forget that a method is provided for the amendment of that Constitution.

The right of eminent domain does not exist because of our Constitution; it exists because of necessity. It existed before our Constitution was adopted. Every government, whatever its form, has certain implied powers. They are the police power, the power of taxation, and the power of eminent domain. No government can exist without them. Our Constitution, so far as it relates to these powers, is not an extension of their scope, but a curtailment, prescribing the limits within which the Legislature may deal with the individuals constituting the body politic.

The first Constitution adopted by the State contained no restriction whatever upon the right of eminent domain. It was not until the adoption of the

Constitution of 1821 that any mention was made of the subject. So that prior to the year 1821 the Legislature passed many laws giving the right of eminent domain for various purposes, many of them for public uses, many of them for private uses, but all of them deemed for the public welfare.

In the year 1821, however, the Constitution was amended, and this clause was inserted:

“Nor shall private property be taken for public use without just compensation.”

This provision came up for construction and was interpreted by the courts to mean that the right of eminent domain could be exercised for no other than a public use. The limitation was implied, not because the people did not have the inherent power of eminent domain, but because the people in defining the powers they gave to the Legislature, having expressed the one purpose for which this power could be exercised, impliedly said it could be used for no other purpose. The argument was that had the people desired to give the right of eminent domain for any other than a public use, they would not have imposed the restriction and used the term “public use.” So that whenever a statute which involves the right of eminent domain comes up for interpretation, the courts at once direct their attention to the question of whether or not the property taken is to be applied to a public use. The negative expressed in the constitutional provision is interpreted to mean affirmatively, “You can take private property for a public use, but not otherwise.”

Is the development of water power a “public use”? The courts of our own State have never decided the question, but they have made intimations in various decisions that if the question were squarely raised, their answer would be that it was not. It should be borne in mind that we have never had in this State what is known as a “Mill Act,” granting the right of eminent domain to mill owners. Acts of this nature have been upheld in many states, but upon an entirely different theory than that of public use. Then, too, they have been viewed in an entirely different light than that of our own Constitution. These decisions, therefore, would be of little assistance to the courts of our own State in interpreting our Constitution.

There is not in this audience a single man, I dare say, but who believes that the right of eminent domain should be given to mill owners so as to enable them to develop streams to the point of maximum commercial efficiency. The time is passed, however, when it can be contended that the mill owner is the only one interested. More water stored means more power, more employment, more people, larger villages, more property subject to taxation, greater prosperity. The public is interested, and the development of water power is so closely associated with the public welfare that we should not hesitate to confer the right of eminent domain in assisting such development.

As the case now stands, the Constitution forbids the Legislature to grant the right of eminent domain except it be for a public use. The answer of our problem, therefore, is very simple. Let us change the Constitution so as to authorize the granting of the right of eminent domain to water power companies.

This recommendation was considered at length in the Ferris Committee report to the Legislature of 1912, but it was never acted upon. Its true significance was never understood by the legislators, nor by the commercial bodies who interested themselves in the consideration of that report and the laws framed to carry out its recommendations.

It was then urged, and will be urged, that even the people cannot change the fundamental law in this respect, and that any statute which would authorize the taking of private property for private purposes would be unconstitutional, because such taking would not be for a public use. We forget that the people who imposed the limitation upon the Legislature in the exercise of the right of eminent domain can remove that limitation.

Let us further consider for a moment the history of the limitations imposed upon the Legislature in the granting of the right of eminent domain. For a long time prior to 1821 there had been upon the statute books of the State of New York a law which authorized, under certain conditions, the opening of

private roads and the giving to the party benefited the right to take so much of his neighbor's land, upon making compensation therefor, as was necessary for the construction of the road. For more than forty years roads were opened under this statute, until in 1843 the question was raised as to whether such a statute was constitutional under the amendment of 1821. The court stated the problem thus:

"Can the Legislature compel any man to sell his land, or his goods, or any interest in them, to his neighbor when the property is not to be applied to public use, or must it be left to the owner to say when, to whom, and upon what terms he will part with his property, or whether he will part with it at all?"

The court held that such a use was private, and the statute was declared unconstitutional. This was in 1843, but the Constitutional Convention of 1846, recognizing that the opening of private roads was so intimately associated with the public welfare of the community, removed the limitations that they, themselves, had placed upon the Legislature, by adopting an amendment to section 7 of article I of the present Constitution, as follows:

". . . Private roads may be opened in the manner to be prescribed by law; but in every case the necessity of the road and the amount of all damage to be sustained by the opening thereof shall be first determined by a jury of freeholders, and such amount, together with the expenses of the proceeding, shall be paid by the person to be benefited. . . ."

Private roads are not public, and no public use is involved. The very language of this section shows that the use is to be private, because it says that the expense must be borne by the person to be benefited.

From 1846 to 1894 the Constitution provided that the right of eminent domain could be used only in the following cases:

- (a) Where public use was involved.
- (b) Where private roads were to be opened.

The Constitutional Convention of 1894 recognized that there was yet another class of cases where private property might be properly taken for the public welfare, although no public use was involved, and that was in relation to the drainage of agricultural lands. Therefore, the following provision was inserted by a further amendment to section 7 of article 1:

". . . General laws may be passed permitting the owners or occupants of agricultural lands to construct and maintain for the drainage thereof, necessary drains, ditches and dykes upon the lands of others, under proper restrictions and with just compensation, but no special laws shall be enacted for such purposes."

So that the right of eminent domain, inherent in government, is, in so far as the right of the State of New York is concerned, now limited to three objects:

- (a) Public use.
- (b) Private roads.
- (c) Drainage of agricultural lands.

The right to exercise the power of eminent domain for the taking of private property is well recognized in all cases where the use is purely public. In the case of private roads and the drainage of agricultural lands there is a taking of private property for private use, but the people have said that such taking was for the public welfare, and that it was a proper governmental function for the Legislature to regulate the drainage of agricultural lands and the opening of private roads.

We all believe that the construction of storage reservoirs upon the headwaters of our streams, the conservation of this vast wasted energy, is a proper governmental function, and that the Legislature should be given power to deal

with the problem. This power is now inherent in the people, and we should at the next Constitutional Convention put into the Constitution authority for the Legislature to pass laws relating to this subject, granting the right of eminent domain, not because a public use is involved, but because it is for the public welfare, even though it is a private use. I trust that the next Constitutional Convention will embody a provision to the effect that:

“The development of the water power of the State is a proper governmental function, and private property may be taken therefor upon just compensation being made.”

I am in favor of the Burd Amendment. It is a step in the right direction. But I would go further. I would give to water power companies the right to take private property upon making just compensation.

Some of my legal brethren may think that the Supreme Court of the United States might hold any law authorizing the taking of private property for water power purposes unconstitutional under the Federal Constitution—in other words, that our Constitution so amended would be unconstitutional. I do not believe there is ground for such an opinion. It should be noted that the only provision in the Constitution of the United States affecting the question is contained in the Fourteenth Amendment, and is in the language of one portion of our own Bill of Rights:

“Nor shall any person be deprived of life, liberty or property without due process of law.”

If private property were taken in the interest of the public welfare for water power purposes, and just compensation were made, it could not be contended that the individual had been deprived of his property without due process of law.

An appeal has often been taken to the Supreme Court of the United States upon the theory that the taking of private property for other than a strictly public use was in violation of the Fourteenth Amendment of the Federal Constitution. In every such case, however, the taking has been upheld. The Mill Acts of New England have often been before that court, and as often been upheld as not being in violation of the Fourteenth Amendment, the court expressly declining to pass upon the question of whether the taking of water for the development of water power was for a public use or not.

The Irrigation Act of California, which authorizes the formation of irrigation districts and the improvement of watersheds for the common benefit, provides for the use of the power of eminent domain, as well as for the taxing of the cost of such enforced improvement upon the property benefited. It, too, has been upheld. So also have laws which permit of the taking of private property for the construction of irrigation ditches, of aerial tramways for mining companies, of drainage systems, even though such takings were for private use. The court seems to hold that it is a proper governmental function for the Legislature to regulate things relating to the public welfare, and that where private property is thus necessarily taken and compensation made therefor, it is not a taking of property without due process of law, but a valid taking, whether it involves a public use or a private use.

I believe it is time for the people of the State of New York to take hold of this problem of the conservation of water in a serious way. The problem is not with the mill owner; he is helpless. The problem is not with the Legislature; it is tied by the restraint of the Constitution. The problem is with the people themselves. And I trust that you who are before me to-day, who I know will constitute a powerful influence in the next Constitutional Convention, will see to it that the development of the water power of the State is declared to be a proper governmental function, and that such Constitutional Convention recommends an amendment to our fundamental law authorizing the taking of private property for water power purposes. That will be a step in the direction of real conservation.

JUDGE KERNAN (presiding): I understand that the pleasure of hearing from Mr. Gardner of New York, who is next on our program, is to be deferred until to-morrow. That gives me the opportunity and pleasure of introducing to you one of the gentlemen who cannot be said to be entire strangers wherever this subject of waterways is under discussion. Indeed, wherever the subject of canals and waterways is under discussion, there is no man in this State who is heard with so much pleasure and interest, and whose views and judgment are given so much weight — the Hon. George Clinton of Buffalo, whom I now have the pleasure of introducing, and who will deliver an address on the subject of "State Generation of Hydro-Electricity." (Applause.)

STATE GENERATION OF HYDRO-ELECTRICITY.

MR. CLINTON: Mr. Chairman and Members of the Waterways Association of the State of New York: I had some talk with our President about the title of my address, and as he seemed to think that I had a depth of knowledge and a gift of "gab" that would enable me to talk upon any subject connected with waterways, I largely left it to him. The consequence is that the title of my address finally developed as "State Generation of Hydro-Electricity."

That is a pretty broad subject. It is a broader subject than this program permits me to treat as I would like to. It involves economic questions as well as physical questions, detailed questions of topography, stream flow, economy of production had in connection with flow and regularity of flow. It involves the necessity of the canals, commerce, navigation and, I think, a few other things. Therefore, I made up my mind to talk to you more particularly of the relation of State generation of hydro-electricity to the canals of the State, devoting a little attention to the general subject.

A consideration of State generation of electric energy by water power involves a variety of questions which I have attempted to generalize. I am going to state them one after another.

First. Is the generation of electric energy by the State and its direct supply to the consumer a proper governmental function?

Second. Is the generation by the State of hydro-electricity and its sale to private individuals or corporations for distribution to consumers a proper governmental function?

Third. Is the production and distribution of hydro-electricity by the State feasible from the point of economy in production and distribution?

Fourth. Is the production by the State of hydro-electricity, even if the State does not undertake to deliver directly to the consumers, feasible from the point of economy?

Fifth. Is the entering of the State upon the field of production of hydro-electricity, whether accompanied by distribution to consumers or not, just to the taxpayer?

Sixth. Is the production of hydro-electricity by the State, whether accompanied by distribution to consumers or not, just to riparian owners and does it tend to promote prosperity of the communities as a whole?

Seventh. If the generation of hydro-electricity be confined to the use of the so-called surplus waters of the canals, is this feasible at present, or in the future?

Now, the statement of those general factors involved gives you some idea of the scope of the subject. I am going to confine myself to a few generalizations, so far as all the questions except those involving the relations of the canals to the generation of hydro-electricity by the State are concerned.

Experience has shown that the entering of government upon the province of private enterprise always involves great injury to private investments, and infraction of private legal rights or tremendous cost to acquire those rights, and

at the same time it discourages that initiative of individuals in business, manufactures and commerce which give life and prosperity to communities.

Again, experience has proved that governments cannot conduct business that naturally requires private energy and interest, in the lines of manufacture, mining, agriculture, commercial business or commerce, as economically, satisfactorily and profitably to the user of the products and the beneficiary of the business, as private individuals can. The moment that the State enters upon business, politics and greed intervene and the real interests of the public are lost sight of, except to the extent that they must be subserved for political reasons. The result is waste in administration, waste in maintenance of plants, waste in construction of plants and graft wherever possible. It is true that where business is carried on by private individuals or corporations, they look for the greatest profits, but in consonance with modern ideas of government, their greed can be controlled within the limits of a reasonable profit either by direct legislation, or, what is better, through the agency of controlling boards or commissions.

So far as the entering of the State upon the business of generating and distributing hydro-electric energy is concerned, it may be said without fear of contradiction that if the public is to get any great benefit, the State must conduct the entire business and not distribute through a middleman, thus creating additional expense to be paid by the consumer.

The production and furnishing of hydro-electric energy by the State, particularly under the circumstances existing in the State of New York, will work great injustice to the general taxpayer. You will notice I say the "production and furnishing;" I don't say "action of the State which makes production and furnishing of hydro-electric energy possible." The tremendous investment involved, as well as the interest charges, will have to be cared for by the taxpayer at large, and in every instance the benefits will accrue to limited localities, so that the general taxpayer outside of those localities will be paying for the purpose of benefiting and accommodating his neighbor, perhaps to his own detriment through competition.

Various schemes have been projected throughout the United States for State and National generation of hydro-electricity, based on chimerical calculations intended to care for the investment and interest charges, as well as administration and construction of plants and transmission lines, through profits to be derived from the sale of the product, but it is entirely evident, upon examination of these schemes, and considering the much greater cost of the production and distribution of hydro-electricity through governmental agencies, that in order to realize a profit sufficient to take care of the investment and all charges, the rates charged will necessarily be higher than those which will bring to private producers a fair profit and to which they can be limited. In other words, the general taxpayer must pay for the benefit to particular localities or the State must charge rates that will bring the cost to consumers in those localities beyond that at which they can obtain hydro-electricity if proper State regulation be applied to private production for public use.

The experiment of production of hydro-electricity has not been attempted in the Province of Ontario, which is so often cited as an exemplar by the advocates of governmental production and distribution, but that province has entered upon the business of buying hydro-electricity and distributing it to municipalities. The experiment is an utter failure so far as economy is concerned. I cannot here enter upon a detailed examination of the causes of this or proofs of its existence, but would refer those who care to examine into the subject to a work written by Mr. Reginald Pelham Bolton, entitled "An Expensive Experiment," which goes into a thorough investigation of the subject, the general conclusions from which are that while individual consumers in some instances may obtain electric light and power at somewhat less rates than those charged by private individuals in similar localities, yet the total cost greatly exceeds that incurred where electricity is produced by private enterprise, the excess in total cost necessarily being borne by the taxpayer for the benefit of the consumer.

I should have added that one of the most valuable reports upon this subject that we have is the report, or the two reports, of the committee appointed by the Legislature. By that committee a most thorough investigation of all these questions was made. The report is the result of careful study of the results of those investigations and of the evidence which was taken from those who were well-informed as to the subjects the committee had under consideration. I wish that report was in the hands of every citizen of the State.

It is quite apparent that the production and distribution of hydro-electricity by the State involves the entering of the State upon a socialistic form of government, and it is also quite evident that the result of paternalism is the destruction of private enterprise and the reduction of the community to the practical condition of servitude, analogous to that of children in the family. Those who believe in this form of government would, of course, advocate any form of business being not merely controlled but actually carried on by the government. This issue must be met and private enterprise encouraged, although individuals and corporations must be made to recognize their social responsibility and must be kept within reasonable limits of compensation for their labor, skill and investment that may be required by justice to those whom they serve. The application of this principle to hydro-electricity is apparent when we consider the rights of riparian owners upon streams adapted to the production of hydro-electricity.

The expense to the State of undertaking generally to produce and distribute hydro-electricity will be so tremendous as to be prohibitive. Except in one or two instances the State cannot enter upon this business with any prospect of success upon any stream of this State, without condemning the legal rights of riparian owners to the flow and use of the waters of the stream.

I am not stating this as a legal proposition. Mr. Baldwin, who preceded me, is incorrect in his construction of the Constitution, which is that there is no power under the Constitution to condemn. I am simply stating the general proposition. I agree with him that the power to condemn in the State for public uses can be obtained by amendment to the Constitution, if it does not exist, even though I am inclined to disagree with him upon the proposition that the power to grant the right of eminent domain to private individuals for private purposes can be obtained by amendment of the Constitution. But whether the power exists or must be obtained by amendment of the Constitution, it is certain that the State cannot engage in the business of utilizing the power of our streams to advantage for the production and distribution of hydro-electric power without condemning the rights of the riparian owners and paying for them.

The cost of this cannot be calculated with any certitude, but it goes without saying that it would run into the millions. A slight indication of the cost is to be found in the case of the Fulton Light, Heat and Power Company, which had riparian rights upon the Oswego River. The State having canalized that river for Barge Canal purposes, and having diverted some of its waters by the construction of a short section of canal, the Court of Appeals held that the riparian owners were entitled to substantial damage. What the amount of these damages will be I do not know, but I do know that the claim made amounts to many tens of thousands of dollars. And when we add to this the cost of construction of dams and plants and transmission lines, of administration and maintenance and repairs, of investment and interest charges, we can see that such an undertaking of the State would be the entering upon an unknown sea of tremendous expense. We should, therefore, go slowly and investigate most carefully and particularly before engaging in such an undertaking.

But it is said that the surplus waters of the canals can be used for the production of electricity and that inasmuch as those surplus waters will exist whether used for electricity or not, the initial expense for the creation of the surplus is not to be added to the expense of creating and distributing the electricity. This claim involves various considerations, some of which are in the province of the expert as to the amount of electric energy that can be produced at various points upon the canal with any hypothetical discharge

of the surplus waters. These considerations are beyond my province, but it suffices to say that there is no place upon the canals of this State where surplus waters can be obtained and utilized without the expenditure of very large sums of money by the State, and that there is no place east of Rochester where it is at all certain that there will be any surplus waters that can be utilized with any regularity for the production of electricity except at locks where electricity sufficient for the use of the canal and nothing else can be produced.

Between Lake Erie and Rochester, waters which come from that lake and which are intended to compensate the mill owners in Rochester for waters of the Genesee River impounded by the dam in that city, could be diverted by the construction of a canal so as to pass over the escarpment of the Genesee River below Rochester, generating a great horsepower without detriment to the canals, but even this scheme would work injustice to the mill owners in Rochester and would cost an excessive amount of money, and, in addition, would benefit only the localities in the neighborhood of that city and including it. It is possible also that the waters of the Genesee might be utilized to some extent without interfering with the State Park on that river.

You will notice that I am unable, without prolonging this paper to an unjustifiable length, to go into all the reasons, but the slope of the canal from Lockport to Rochester has been adjusted with a view to putting the discharge of the waters in the pool above the dam which is to be constructed at Rochester. That dam is constructed to carry the canal across the Genesee and the extension of the canal on the east side. That slope will supply to the Genesee River a sufficient amount of water in addition to what is required for navigation to make up for all the waters of the Genesee impounded in the pool at low water. And if you take any of that water from the canal west of Rochester, you make it necessary to increase the slope and increase the current to an extent which will be a great interference to navigation. If you don't do that, you deprive, at low water, the mill owners in Rochester of the waters of the Genesee to which they are entitled. This is one illustration of the difficulties to be encountered in disposing of such a question.

More than that, if you take the waters from that canal necessary to create any great amount of water power over the Genesee escarpment, you are in danger of running counter to the treaty between Great Britain and the United States which prohibits the taking of more than a certain amount of water from Lake Erie by the Niagara River or by any diversion. That water is all appropriated as allowed by the treaty with the exception of about 4,400 cubic second feet, which will be undoubtedly awarded to other interests which need it.

On the Oswego River water power could be utilized, but only to any considerable extent by condemnation of the rights of riparian owners. The same is true to a minor extent on the outlets of the lakes supplying the Cayuga and Seneca Canal, although it is doubtful whether those waters could be used profitably by the State. That is on account of the low head. East of the eastern end of Oneida Lake we reach a summit level for the supply of which and for the supply of the Mohawk River, there are various feeders and two large reservoirs, one at Delta and one at Hinkley, which have been constructed, but all these sources will furnish water only sufficient for a safe supply to the Erie Canal, including the canalized Mohawk.

These feeders and reservoirs are the result of most careful and thorough survey of the sources of supply by Mr. Rafter made for the purpose of ascertaining the feasibility of constructing the Barge Canal, and also for the purpose of locating it to the best advantage in connection with the water supply. The supply is adapted for a tonnage of ten millions per annum at low water and takes into account all the losses from evaporation, percolation, leakage at locks and abstraction, as well as overflow at waste weirs, upon the basis of the original plans for the canal, but those plans have been changed since the survey was made and the wastage is undoubtedly considerably larger than that which Mr. Rafter had in view. Beyond this, the tonnage of the Erie Canal is expected, with the growth of our commerce and manufactures, to largely exceed ten millions per annum, and the drain upon our present sources of water supply

will be increased accordingly. The available water, therefore, must be devoted to navigation purposes upon the canal and must not be subjected, directly or indirectly, to any other purpose. Not only is this necessary because the interests of the public bound up in the canals and their utilization are paramount to any other use, but the waters of the canals are part of them and cannot be diverted, without a breach of the Constitution so far as they are needed for canal purposes.

But it is said that the surplus waters can be diverted. This involves the assumption that there are surplus waters in the proper sense of that term. The water supplied to the canal and the canalized Mohawk and the Erie, for example, may be in excess of that needed for navigation to-day and yet it may be necessary to conserve that excess for the low water of to-morrow. In the spring of the present year the water in the Mohawk was so low that feeding from the Delta reservoir had to be resorted to in order to enable those who had contracted to do dredging to work at all. I speak of this as an illustration of the irregular condition of water supply existing upon our waterways. Let us suppose that the government somewhere upon the Mohawk were to erect a hydro-electric plant; this would have to be done upon the basis of low water, it could not be done with safety to navigation upon any other basis.

For instance, if here in Albany you had a State hydro-electric plant, we will say, at Visscher's Ferry, which was to utilize the surplus waters of the canal, and even if you could generate the amount of power which has been claimed for it, it would be unsafe so far as the people of Troy, Albany, Cohoes and Schenectady were concerned to figure upon an amount of hydro-electric energy for distribution any greater than that which could be supplied by surplus waters flowing over the dam at low water because if you proceeded upon any other basis, you might have one day, we will say, a full supply for Albany; the next day your street cars would lie idle. One day your factory would be running and the next day, perhaps, it would have to close down. One night your house would be lighted by turning a switch and the next night you might have to resort to kerosene or gas. Therefore, you would have to proceed, if you do it at all within the range of safety, upon the basis of what surplus water there may be at low water.

The theory that a supply could be furnished by the Delta and Hinkley reservoirs is mere sophistry, for the waters of those reservoirs must be withheld to furnish a proper supply for navigation during low water time and until the reservoirs could be refilled when the rains come. Now, we have a very efficient Weather Bureau at Washington, but that Weather Bureau can't furnish the rain for us. And we don't know when rain is coming, and it takes a continued rainfall for considerable time to anywhere near fill those reservoirs. It is during the spring and the fall that the water can be supplied for them. Therefore, you cannot safely draw those waters down to furnish surplus waters for the canal, because immediately afterwards you may need those very waters for navigation and they are gone.

There are in sight absolutely no surplus waters which can be supplied to the creation of hydro-electricity, and only time can tell whether there will be any surplus water, and whether there will be a sufficient amount at any point to create hydro-electric energy in paying quantities. It would not be safe for the State to construct plants and transmission lines, based on the use of surplus waters of the canals and the Mohawk without the construction of auxiliary steam plants and this fact shows the futility of at present entering upon any scheme by the State for the creation of hydro-electric energy by the use of surplus waters, so called. In the course of time, if the fourth proposed amendment to the Constitution is adopted by the people, it may be possible that the conservation of the waters flowing in the streams in the northern part of the State, by the construction of reservoirs, may furnish water sufficient to create a reliable canal surplus, after caring for the legal rights of riparian owners upon those streams and furnishing municipalities in that locality with water for the uses of their people. This is a consummation devoutly to be wished, but until that time comes no attempt to use supposed surplus waters of the canal for hydro-electric purposes should be made.

In considering the use of waters of the State for canal purposes, we must remember that the canal system of the State will not be completed by the completion of the Erie, Oswego, Champlain and Cayuga and Seneca Barge Canals. The Black River canalization must be finished—I say finished; it is talked of as something that ought to be undertaken, but I regard it as in process of being done—in justice to the people in that region who have contributed and are contributing and will contribute to the construction and maintenance of the Barge Canals named, and in justice to the people of the State generally who are entitled to the full benefit of inland water transportation as furnishing cheap freights, both in carrying and in regulating railroad rates. The people of this State are entitled to have the canal system completed that they may reap the full benefits that will come from the building up of all sections of the State and the securing to us of our pre-eminence in manufactures and in commerce, and that will make our arable lands valuable.

I have mentioned the Black River region more particularly, but would add that there are in addition the Chemung canal, which should be improved to reach the coal regions of Pennsylvania, and other artificial waterways that have been projected.

I don't mention the Flushing Creek-Jamaica Bay Canal, simply because that is not pertinent to the discussion of conservation, but it is one of the projects which deserves our earnest consideration. The result depends, I believe, on the result of a survey which is being made by the State authorities.

I have treated this subject somewhat more particularly in a letter written by me to Mr. Edward N. Smith of Watertown, a copy of which I ask may be printed with this paper in the report of the proceedings of this Convention. I would like to go into the matters contained in that letter more in detail but it would take too long a time. Suffice it to say that it enlarges upon the propositions last mentioned in this address, particularly with relation to the necessity of pressing to passage and adopting that amendment.

Here is the letter mentioned by Mr. Clinton:

“BUFFALO, N. Y., Oct. 20, 1913.

“*Hon. Edward N. Smith, Watertown, N. Y.:*

“DEAR SIR.—You have asked my opinion as to the proposed amendment to Article 7, Section 7, of the State Constitution, so far as the canals are concerned. I am inclined to look at the matter from a much broader point of view.

“The proposed amendment will relieve the State from the effect of the clause in the article to be amended, which absolutely prohibits the removal or destruction of any timber within the forest preserve and will permit the construction of reservoirs to an extent that cannot possibly injure the beauty, picturesqueness or usefulness of the State lands, but will have a contrary effect, at the same time bringing a revenue to the State which ought to pay for all expense incurred. The benefit to be derived by municipalities and by private individuals paying a fair compensation will be very great, and the State at large will get the immeasurable increase of its prosperity that always comes from fostering the interests of any great section. Beyond this, the justice to the northern part of the State by extending its manufacturing and commercial advantages and by protecting the health of its municipalities and supplying them with potable water must be apparent to any one who considers the immense amount of money expended and being expended for the direct benefit of other portions of our State.

“But you ask more particularly whether the proposed amendment will be advantageous to the canals of this State.

“If we consider merely the Erie, Oswego and Champlain canals, we find that the amount of water required for them runs into many millions of cubic feet each day of navigation, and during the closed season, if the artificial prisms are kept full, as they should be, millions of feet of water will be required to care for loss from natural causes as well as abstraction. It is not generally recognized that there is a constant and very great loss of water in the canals,

caused by evaporation, percolation, leakage and the use of the locks, nor is generally recognized the very great loss occasioned by these causes.

"The Erie Canal from Buffalo to the eastern end of Oneida Lake has ample water supplies from sources furnished directly by nature without the necessity of constructing reservoirs, but over the summit level from Oneida Lake to the Mohawk the canal will have to be supplied with water by artificial means, and in addition to this the Mohawk itself will have to receive from other than its own tributaries a very great supply of water during the dry season, as its flood waters cannot be wholly controlled or conserved. The same condition exists to a minor extent on the Champlain, but the Oswego needs no artificial aid.

"The hydrography of the northern part of the State was thoroughly examined before plans were made to take care of what I may call the Rome summit level, and it was found necessary to construct various reservoirs the largest of which are those at Delta and Hinkley, to furnish the needed water for such purpose.

"That these calculations are necessarily based upon minimum rainfall and run-off and whether the calculations made are sufficient to assure a full supply of water for the canal is uncertain and cannot be ascertained until the actual supply and the demand of traffic upon the canal shall by experience have determined the question.

"Beyond this the plan of the canal adapts it for a traffic of 10,000,000 tons per annum, and in the coming years it is entirely possible that it may exceed this.

"The supply of water from south of the canal from Rome easterly is utterly inadequate for canal purposes, and we must look to the watersheds north. It goes without saying, therefore, that the State should as speedily as possible put itself in a position by removing the Constitutional obstruction to the creation of reservoirs in the Adirondack region, which will enable it to secure by conservation a supply which will be undoubtedly adequate for the present needs, and possibly for the future needs of the Erie Canal, especially as at the same time it can assume a position which will enable it equitably and justly upon receipt of proper compensation, to care for the water supply of municipalities in the northern part of the State and to foster its industries.

"I may add that the present movement, misguided and premature as it is, to utilize canal waters for the creation of hydro-electric energy, to be diverted from canal uses, would seem to make it extremely advisable to secure the most ample supply of water possible for canal purposes.

"In this connection, however, we must remember, what is so often forgotten, that there are limitations upon the right of the State to appropriate the waters of its streams for public purposes in derogation of the rights of riparian owners, without condemnation of those rights, and that to destroy the rights of the riparian owners upon the various streams in the northern part of the State would cost the State many millions of dollars, without any assurance that the health and needs of the municipalities would be adequately taken care of and the industries of the northern part of the State properly fostered, without great additional loss to the State financially. And it would seem that any plan which would insure the protection of private interests would care for the municipalities and would secure an ample supply of water for commercial purposes, as represented by the canals, and should be encouraged, at least by taking the first step which would give the State the power to act, namely, the approval of the constitutional amendment No. 4.

"Before closing I wish to say that the commercial interests of the State, as represented by water transportation, require—if we are to take advantage of all our natural resources—that connection between Lake Ontario and the Erie Canal at Watertown should be provided, and that connection with the coal districts of Pennsylvania by water, through the improvement of the Chemung Canal, should also be provided. I speak of these two projects alone because they are the only ones immediately connected with the subject I am discussing. If the State provides ample water storage, the connection between Lake Ontario at Watertown and the Erie Canal at Rome can be made practically available, while without it this cannot be done,

"It is possible also that if the constitutional amendment is approved by the people, as it should be, we may in the future see conservation of our natural water resources in the northern part of the State, which will answer all the purposes I have outlined above, and leave a surplus that may be utilized by or for the benefit of localities over the waters needed for canal purposes, under all circumstances, by the generation of hydro-electric energy. From every point of view, and particularly from the canal point of view, it seems to me that the interests of the entire State will be subserved by the adoption of the amendment and that not only those immediately interested in water conservation in the Adirondacks and Black River region will be benefited, but the great commercial interests of the central and southern part of the State, from Buffalo to New York City and Plattsburg, on the line of the canals, and from the junction of the Cayuga and Seneca Canals with the Erie to the southern bounds of the State, will be assured and greatly promoted.

"Yours very truly
 "(Signed) GEORGE CLINTON."

Judge Cullinan announced that the Committee on Resolutions would meet at 4:30 o'clock in Room 302, third floor, west section.

JUDGE KERNAN (Presiding): The members will all take notice of the announcement and be governed accordingly.

HON. JOHN D. MOORE, Conservation Commissioner: I am unfamiliar, Mr. Chairman, with the procedure at the annual meetings of this association, but I trust that the members of the association here present will feel sufficient interest in the very able discussion by Mr. Clinton of his side of the hydro-electric question, and that their interest in it will be so keen that, while they may not all agree, they will be at least willing to listen to what I am confident, and what I confidently believe, is an equally important other side.

Many of the statements and assertions which he has advanced with such conspicuous ability are at least open to discussion, and in behalf of a great State department which has spent much time and much money upon the topic which he has spoken upon, I ask an opportunity to present what we believe are certain facts to this association.

I am not prepared, in view of the length and detail of his paper, to avail myself of that privilege now, if it be granted now, but I would like an opportunity to have perhaps twenty minutes to-morrow morning or afternoon, at the pleasure of the association. Perhaps the members of this association are not aware of it but the Legislature has acted upon this matter favorably and the man who was Chief Executive of this State vetoed the bill. I consider that the members of the association are entitled to full information on the subject, and I trust that they will avail themselves of this offer.

JUDGE KERNAN: I have no doubt that the request of the gentleman will be considered and disposed of by the members of the convention. At present, of course, we must proceed with the next gentleman on the program.

It is with great satisfaction to us of the northern part of the State, who are greatly interested in the subject of the Black River canal improvement and development, that we have the consent of Hon. John G. Jones, of Carthage, to address us upon the subject of "The Black River Canal Referendum of 1913."

BLACK RIVER CANAL REFERENDUM.

MR. JONES: To the people of the State of New York the extension of our canal system is of vital importance not alone because inland waterways afford cheaper and in some respects better transportation facilities, but because the building of canals has and always will mean the development and industrial growth of the communities through which they pass.

Industrial activity as a rule means prosperity and added wealth to any locality and as the different sections of our State prosper so will the State as a whole prosper, through the increased production of manufactured articles, the

development of mineral resources, the increased output of farm products and the added wealth brought about by the increase in valuation of taxable property. Any project which will tend to bring about these increased benefits should be fostered by the State as being the means of bringing prosperity to all its people.

It is given to me to-day to speak to you on the subject of canal extension as outlined in the Canal Referendum Bill of 1913.

Let me first explain to you who may not be entirely familiar with it the exact provisions of that bill and the events which led up to its introduction. In 1911 the people of northern New York became very much aroused over the lack of transportation facilities as afforded by the one railroad within its confines — the New York Central and Hudson River Railroad and leased lines. They awoke to the fact that there was but little hope for the further development of that section of the State, that industrial growth must cease unless better means for the transportation of their products were afforded. They realized that little or no hope was to be had of increased railroad facilities through extension of the New York Central Railroad system or through any possibility of the building of competing lines, and it became at once apparent that deliverance from conditions which were rapidly becoming intolerable must come through the repair and extension of the Black River Canal. Once this sentiment was aroused it became the fixed idea of all the people of the Black River valley that not only should the old canal, which extends from Rome to Carthage, be repaired and put in condition for traffic, but it should be extended from Carthage to Lake Ontario — the extension to be in form and dimensions similar to the Barge Canal. The people urged their representatives in both branches of the Legislature to work to this end, with the result that a bill appropriating \$50,000 for the repair of the Black River Canal north from Boonville to Carthage was introduced, passed both houses and approved by Governor Dix. Further, a bill was introduced providing an appropriation of \$15,000 for a survey for an extension of the Black River Canal from Carthage to Lake Ontario and this, too, was passed and approved by Governor Dix. As soon as the money became available the repairs on the canal north from Boonville were started and the survey for the extension began.

During the years 1911 and 1912 the canal was repaired from Boonville to Lyons Falls and well within the limits of the \$50,000 appropriation, but there still remained the dredging of the river section of the canal from Lyons Falls to Carthage to be finished in 1913. To complete the work it was found that an additional appropriation would be necessary and during the last session of the Legislature a bill was introduced calling for an additional appropriation of \$50,000 to complete the necessary repairs and thus make the work done in 1911 and 1912 of some avail. This bill passed both branches of the Legislature but was vetoed by Governor Sulzer without comment. The survey of the extension was pushed to completion in 1911 under the direction of the State Engineer and Surveyor and plans and estimates of cost prepared.

In 1912 a bill was prepared calling for an appropriation to be voted upon by the people for the building of the extension of the Black River Canal from Carthage to Lake Ontario, but later changed to include the reconstruction of Chemung Canal and the conversion of the Glens Falls feeder into a canal, and asking for an appropriation of \$25,000,000. This bill met with the approval of both branches of the Legislature, but failed to meet the approval of Governor Dix owing to the *claimed* greater demand for a further appropriation for completion of the good roads system of the State. In 1913 another effort was made to secure the passage of a referendum bill not only to take care of the routes specified in the bill of 1912, but including in addition the Flushing and Jamaica Bay route and the reconstruction of the old Delaware and Hudson Canal from Rondout on the Hudson to the Pennsylvania line at Lackawaxen. This bill, calling for an appropriation of \$55,000,000, was introduced in the Assembly and passed to third reading, but was recommitted to the Ways and Means Committee after several ineffectual attempts were made to get Governor Sulzer to sanction its passage. The Governor claimed, and perhaps justly, that inasmuch as only the extension of the Black River Canal had been surveyed and plans

and estimates prepared, that it was better to wait until the other routes could be likewise surveyed and estimates of cost made before submitting the proposition to the people and, further, that he considered the erection of public buildings was of greater importance at this time and that such a proposition should be submitted to the people first.

Thus again our project was side-tracked. Immediately the Governor's views were made known as to the necessity of the surveys of the Chemung, Flushing-Jamaica Bay and Glens Falls routes a bill was introduced in the Assembly calling for an appropriation of \$35,000 for the Chemung canal, the Glens Falls feeder, a canal between the Flushing River and Jamaica Bay and a canal from Newtown Creek to the Flushing Bay Canal. This bill passed both houses and was approved by the Governor on April 5th.

You will see from the explanation given that since demand was first made by the people of the Black River valley for water transportation through repair of the old Black River Canal and its extension from Carthage to Lake Ontario, the people of other sections of the State also became aroused to the necessity for better transportation facilities and insisted upon their rights to have their localities included in the general plan for canal extension. The great importance of the reconstruction of the Chemung Canal comes from the fact that this route would furnish an extension of the Cayuga & Seneca Canal, extending from the deep waters of Seneca Lake at Watkins to the Susquehanna River near Waverly, on the New York side of the Pennsylvania line, and thus afford a direct water route from northern New York to the great coal fields of Pennsylvania. Thousands upon thousands of dollars in freight on coal would be saved to consumers once this waterway be again opened for traffic, to say nothing of the relief afforded to the inhabitants living in the fertile region through which this canal would pass.

Here let me add that it was proposed to send a committee composed of Assemblymen and Senators to meet with members of the Pennsylvania Legislature, had the referendum bill of this year met the approval of the Governor, with the idea of arousing sentiment in favor of opening up their canals and co-operating with the people of New York State to the end that water communication might be extended from the north to the central part of their State. A communication addressed to the speaker of the Pennsylvania House of Representatives received the reply that their committee would be very glad to confer with the committee from New York State and to give the matter of canal extension careful consideration.

There is little or no question but that the people of Pennsylvania would co-operate with us once they fully realized the benefits to be derived from an all-water route to all parts of our great State. The importance of the Black River Canal extension has been quite thoroughly discussed at two previous meetings held by your Association—in Buffalo in 1911 and in Watertown in 1912—and I will not take up your time in further discussion of it save to add to what is already in your records, that the people of the north are still insistent that in the building of the canal from Carthage to Lake Ontario by the State lies their hope for future development and growth; that the State owes them this great benefit from the fact that they have and are now bearing their part of the expense of the building of the great waterways across the central part of the State from Buffalo to the Hudson; that they will have to pay their share of the expense of the building of the great terminals so necessary to the successful operation of the Barge Canal and they demand it as their due, and justly so, that the State grant to them their just request to be allowed a waterway connection with the great markets of the State—New York, Buffalo and intermediate cities—as well as access to the coal fields of Pennsylvania, and the Canadian ports along the St. Lawrence River. Once this waterway is built will begin the greatest era of prosperity the people of the north have ever known and through their prosperity will come added wealth to the State. We of the north are in no way selfish and we fully realize the need of others for the same benefits we are asking.

To the people of the northeastern part of the State the converting of the Glens Falls feeder into a canal will bring equal benefits by giving them a direct

waterway connection with the Barge Canal at Fort Edward and thence to the markets in the eastern, western and southern parts of the State. They also will receive the great benefit to be derived from cheaper coal by reason of all-water transportation from the coal fields of Pennsylvania direct to their door. They, too, are paying their part of the expense attendant upon the building of the Barge Canal and canal terminals and their request for recognition by the State is also just and right and should be granted.

Inasmuch as the reconstruction of the old Delaware and Hudson Canal from Rondout to Lackawaxen is not included in the survey appropriation granted by the State, it is very doubtful if this route can be included in the referendum bill to be introduced in 1914, and therefore I will not enter upon any discussion of this extension of the canal system. That it has the united support of the people along its route and that it has the merit of providing a shorter route from Pennsylvania to New York City is not to be denied, but as it is apparently against the policy of the State to appropriate monies for the building of any canal unless complete plans and estimates have been first prepared by the State Engineer, consideration of this extension would be useless at this time. In speaking of the next route, the Newtown-Creek, Flushing Bay Canal, a survey of which is now being made by the State engineers, I am frank to say that I am not at all familiar with the lay of the ground and so will not attempt to discuss this proposed extension of, or rather addition to, the canal system. It was not included in the referendum bill of either 1912 or 1913 and so was not brought to the attention of your Association or to the Ways and Means Committee of the Assembly.

There remains to be mentioned in this paper a proposed extension to the canal system of the State, one which is of equal if not greater importance than any I have heretofore spoken of save, possibly, the Black River Canal, and that is the proposed Flushing-Jamaica Bay Canal, extending from the Flushing River across Long Island to Cornell Basin at Jamaica Bay. The great importance of this canal becomes at once evident when it is considered that it would afford a still water route from the Hudson River to the Barge Canal terminals to be located at Jamaica Bay, thus avoiding the necessity of the barges from the Barge Canal passing through the already congested harbor of New York and out into the open sea around into Jamaica, thus not only saving a considerable distance but the dangers consequent upon open ocean travel by heavily laden canal barges. There are those here to-day who are much better prepared to explain to you the great advantage and necessity of this proposed canal than am I, and, therefore, I will not consume more of your time in discussing the obvious merit of this route.

It has been my intention in this paper to bring before you the absolute necessity of further extension of our canal system to the end that all parts of our State may be benefited by water transportation and further, and which is of paramount importance, the absolute necessity for the building of inland waterways if the State of New York is to continue to have its share of the carrying trade of the west and northwest.

To those of you who are familiar with the great work now being carried on by Canada in the construction of new canals and the enlargement of her existing canals, it must be apparent that within a very few years, unless the people of the Empire State become awake to the great necessity of canals and canal terminals with adequate elevators and handling facilities, the great volume of the grain carrying trade of the west and northwest will be absorbed by the Canadians. Already the Canadian government has appropriated \$50,000,000 for the extension and enlargement of the Welland Canal for a distance of over twenty-six miles, which, when completed, will enable the great lake freighters carrying from 10,000 to 12,000 tons to pass through without breaking bulk and land right at the docks of Montreal, where the very finest elevators are now provided for storage, and more to be built soon.

It is time that the people were made aware of what is going on across our northern border in the way of canal construction and extension, and what it means to the people of this State as well as to the nation at large unless we put ourselves in a position to compete in waterway traffic. New York City is the natural port for delivery of western products, but she must be in direct com-

munication with the west and northwest by means of an adequate, all-water route if she is to remain supreme as the greatest market center on the American continent. The earnest effort of every one interested in the welfare of our State should be directed to the accomplishment of the result that a referendum bill providing an appropriation for the canals mentioned is passed during the coming session of the Legislature and approved by the Governor. Once this is done and the proposition is explained to the voters of the State I firmly believe they will sanction it by an overwhelming majority.

I cannot refrain at this time from trying to impress upon your minds the fact that the Canadian government is now and always has been highly in favor of inland waterways as a means of transportation. Witness the fact that at present she has nearly 1,000 miles of completed inland canals and many more miles already projected and under construction.

When you understand that with the completion of the new Welland Ship Canal there will be an all-water route for the largest lake vessels from Duluth to Montreal, a distance of 1,336 miles; from Fort William to Montreal, a distance of 1,214 miles; from Chicago to Montreal, a distance of 1,240 miles; that Montreal now has an all-water route direct to New York via the Champlain Canal, a distance of 457 miles, it can but become apparent to you that Canada is bending every effort to control the carrying trade of the west and north and that unless a strong effort on the part of the advocates of canals is made to the end that the State of New York, and the United States as well, adopt a policy favorable to inland waterways, within a few years at the most the carrying trade from points tributary to the Great Lakes will pass our doors and go direct through Canadian territory to Montreal and thence to the Atlantic Ocean. Consider the immense loss which the State of New York alone would sustain once such a condition prevails, and it is certain to prevail unless our governments, both State and National, show their appreciation of the vast importance of inland waterways, by building not only canals connecting to the Great Lakes, but also lateral canals to act as feeders for those great main channels.

Mr. President, your Association is to be congratulated upon the splendid work it has already accomplished towards the building up of an adequate canal system in the State of New York, but there is much more for it to do along this line if our State is to furnish an example for all other states in the Union to follow, in the development of natural resources by means of that great developing agency — transportation by means of inland waterways.

PRESIDENT HILL: On account of the absence of one of the speakers for the afternoon, we will advance one from the program of to-morrow to this hour. Our Secretary has given a great deal of time to the work of this Association, as evidenced in the publication of the proceedings of the last convention and in other ways that I need not detain you now in enumerating. Mr. Ellsworth is thoroughly committed to the subject of waterways and the uses to which waters may be put and at his own expense made an extended tour through the Canadian Northwest this last summer and gathered information which will be of great interest to the people of this State. He has served us so well in so many ways that it is a great pleasure for me to present him this afternoon and he will speak on "Canadian Activities in Waterway Matters." (Applause.)

CANADIAN ACTIVITIES IN WATERWAY MATTERS.

MR. ELLSWORTH: Not a sod can be turned, not a foot of steel rail can be laid, not a foot of power transmission wire can be strung in Canada west of the Province of Ontario without positively or negatively affecting business in the State of New York.

The turning of a sod means an increase in the producing area and in the grain shipped to market, 41 per cent. of which passed through Buffalo and other American lake ports last year. An increase in railroad mileage means either new areas opened for settlement and cultivation or the deflection of shipments from the Great Lakes route, and additional power transmission wires mean an

increase in manufacturing facilities and a consequent decreased demand for American goods.

That portion of the Canadian traffic in which we are particularly interested comes down the Great Lakes. It is and for many years will be composed almost exclusively of agricultural products, while the westbound tonnage will be made up very largely of coal and manufactures. These agricultural products consist almost wholly of wheat, oats, barley and flaxseed, and the traffic originates in the three prairie provinces of Manitoba, Saskatchewan and Alberta.

The total area of these provinces is 756,441 square miles, equal to the area of all the American states east of the Mississippi river and the Dakotas, except only Mississippi, Louisiana, Alabama, Georgia and Florida. Of this Canadian area it is estimated that 77 per cent. is tillable.

What is even more impressive to me is that one of the imperial plans of the Canadians is to pass over provincial boundaries and by pushing back the Arctic ice line, bring under cultivation areas that you and I have believed to be no more than a frigid wilderness of stunted vegetation. For several years the Hudson's Bay Company has had a flour mill in operation at Peace River Landing, 200 miles north of Edmonton, and 568 miles north of the American boundary, and it has another at Fort Vermilion, another 200 miles north, both of which have as much to do as similar mills in more temperate climates. But more remarkable than these is the fact that at Fort Simpson spring wheat is grown that grades No. 1 Hard and oats are grown that grade 38 pounds to the bushel, and Fort Simpson is 800 miles north of Edmonton and 1,168 miles north of the American boundary, in the heart of the region in which the romancers would have us believe the gods of the Arctic cold roam the year round.

The Canadians are not daunted by, but defy, nature. They say they will change the climate of the regions in which they are building an empire in the wilderness as they have changed it in areas now under the plow. You and I can recall the time when stories came down from the north about Manitoban crops ruined by frosts, but to-day how often do we hear such a report? Now, when they come, such stories are from Saskatchewan and Alberta, because early frosts in the fall and late frosts in the spring have been largely banished from Manitoba by cultivation, and the same thing will be done. Canadians say, in Saskatchewan and Alberta.

Moreover, at agricultural stations in Canada trained scientists are at work on the development of a wheat whose period of maturity will be shorter than that of any wheat now known, and perhaps by a process of artificial selection they will eventually succeed.

Fifty years ago, it is said, there were not more than 12,000 whites in the country between Fort William, at the head of navigation on the Canadian side of Lake Superior, and the Pacific Ocean. In 1911 the population of the three prairie provinces was 1,342,709, an increase of 157.2 per cent. over 1901. In 1902, 67,379 immigrants entered Canada, and in 1912 the number was 354,237, an increase of 405.2 per cent.

I am touching apparently at length upon these elements because almost everything in transportation development, including waterways, that is done in Canada is based upon the growing demand of the grain crops for facility of movement.

The Canadian wheat crop for this year is estimated at about 220,000,000 bushels, which means that the total grain crop of the prairie provinces will be, according to conservative estimates, not far from 600,000,000 bushels, compared with a total of 115,156,302 bushels ten years ago. This vast increase means that if we are to get our share of the business we, as well as the Canadians, must prepare to handle it. In 1912, Donald Morrison, retiring president of the Winnipeg Grain Exchange, said: "The railways have done marvels in grain carrying, but the double tracking of our three great systems, the building of the Hudson Bay road, and the opening of the Panama Canal will scarcely be sufficient to overtake the rapidly developing grain areas of the west." I think Mr. Morrison might have gone further and said the doubling of the grain fleets on the Great Lakes, the enlargement of the Welland Canal and the construction of a 35-foot channel to deep water beyond Montreal, and the completion of our own barge canal, together with the extensions of which he spoke, will hardly

be sufficient to take care of the vast and steadily increasing flood of grain from those distant provinces, if the present practice of hurrying the grain to market immediately after harvest is continued.

One of the most ambitious projects of the Canadians is to open a canal and canalized route from the Great Lakes that will, in its ramifications, not only afford a waterway almost to the foot of the Rocky Mountains, but will connect the Great Lakes and Hudson Bay, and by a river and lake route extend to the Atlantic Ocean. The plan may be viewed as a single proposition, although as a matter of fact it includes three projects, one or more of which are considered by some people as quite impracticable at present. The execution of the plans means the construction of a series of waterways that would form a network in the country west of Hudson Bay, east of the Rocky Mountains, and from near the American boundary northward to the Arctic Ocean.

Starting from Lake Superior, the first of the three routes follows Pigeon River and by way of various other rivers and minor lakes reaches Rainy Lake and Lake of the Woods, and stops at the City of Winnipeg. The second project, in mileage not only the largest of the three, but one of the largest on the continent, begins at Winnipeg and goes northward by way of Lake Winnipeg to the portals to the north and west, and then by a route to be chosen, to the MacKenzie River and the far north, with a branch line up the Saskatchewan to Edmonton and the head of navigation east of the Rockies, almost 1,000 miles from Winnipeg, not as the stream flows, but as the crow flies. Chief Engineer L. A. Voligny, in charge of the surveys of the Saskatchewan River, was quoted last August as saying that he had found a channel 10 to 20 feet in depth practically all the way from Edmonton to Le Pas, 375 miles from Winnipeg, and that eventually the waterway would be completed through to Winnipeg.

The third project, in which we have a special interest, because the association supporting it was born in the United States, contemplates the construction of a waterway by way of the Red River, Lake Winnipeg and other lakes and rivers to Nelson River and Hudson Bay. This project was fathered and is supported by the Hudson Bay Navigation Association, organized at Grand Forks, North Dakota, in March, 1912. Its membership includes not only Canadians and representatives of Canadian communities, but individual Americans and representatives of communities and commercial organizations in the Red River valley south of the Canadian boundary.

These various projects, if carried out, would exercise a profound influence, their promoters believe, in regulating freight rates, and would also make possible water shipments from near the base of the Rocky Mountains and the edge of the Arctic snow to the Great Lakes and the seaboard. Despite the fact that one or more of these projects is considered impracticable at present, they are being carefully studied. It is worth while to notice that, taken individually, these projects are on an imperial scale and they may indicate to us the spacious thinking and the heroic outlook of the Canadians. They have an empire in the prairie provinces and they know it, and they think and plan in terms of empire and of decades rather than in terms of provinces and a single year.

Two of the projects are more or less directly connected with the project for a steamship line from Port Nelson, on the west side of Hudson Bay, to England, and the building of a railroad from the Canadian Northern at Le Pas to Port Nelson, as an additional outlet for the western grain.

Most of the reports concerning the proposed Hudson Bay steamship route are inconclusive. Thus, on May 24, 1912, we find the Canadian correspondent of the *London Times* saying: "We have lost count of the number of expeditions that have gone out to report on the practicability of Hudson Bay navigation. Over and over again reports have been solemnly laid before Parliament. But still there was doubt, and yet another expedition was dispatched to confirm uncertainties and to effect delay." These uncertainties pertain largely to the presence of ice and fog in the Bay and Hudson Strait, and the reports vary in tenor with the number of investigators.

Of navigators who admittedly have special knowledge of the subject, some will say the Bay is open for five months in the year and the Strait for four months, while others will say that both Bay and Strait can be easily navigated for six or seven months every year and others will declare that neither

the Strait nor the Bay is safely navigable for more than three or four months, year in and year out. It is unnecessary to remark that these opinions may indicate whether the person who utter them favor or are opposed to the Hudson Bay navigation project.

The view may be somewhat amplified by consulting the records left by at least one of the adventurers of the Hudson's Bay Company. George Bryce, in his interesting volume entitled "The Remarkable History of the Hudson's Bay Company," in referring to John McLean, a company factor who was stationed for many years in the Bay country, including northern Labrador, says: "Referring to the fog that so abounds at this point (Fort Chimo, Ungava Bay), as well as at the posts around Hudson Bay, the discontented trader says: 'If Pluto should leave his own gloomy mansion in *tenebris Tartari*, he might take up his abode here, and gain or lose but little by the exchange.'" In summarizing McLean's account of his voyage to Ungava Bay Bryce says: "On leaving York Factory in August the brig encountered much ice, although it escaped the mishaps which overtook almost all small vessels on the Bay." Some people say that such testimony as this is worth more than a galaxy of special reports, while others hold that it is worthless because McLean was discontented and therefore prejudiced.

But the question before us is as to the effect the Hudson Bay navigation route, if opened, will have upon existing transportation lines. It is to be borne in mind what while we seem to be far afield in discussing conditions in and near Hudson Bay we are actually studying a situation that at an early day, it is believed in certain quarters, may have a profound effect upon the amount of Canadian grain that passes through Buffalo, Rochester, Albany and New York. The question as to the effect of the Hudson Bay navigation route may be simplified by assuming that the Canadian government will supply everything in the way of railroads, rolling stock, terminal elevators, wharves and other harbor works as well as lights, buoys and other safeguards to navigation, and that the transportation companies will have to supply only the vessels for moving the grain from the shores of the Bay to England.

It is admitted that vessels will have to be built especially for the Hudson Bay service, and it is claimed that for various reasons it will be unprofitable to use them in other service. The maximum that they can be employed in the Hudson Bay trade will be seven months in the year, thus making it necessary for the vessels to earn enough in that period to pay a fair return for the entire year upon the investment. Another factor is that the cost of a vessel of special construction is usually higher than that of a normal vessel of the same tonnage. Moreover, visiting a rocky and stormy coast, with an ice and fog hazard that is considerable for six to ten months out of the year, insurance rates will be high. In the presence of fog and ice ships move slowly, and slowness dissipates profits. With these facts in mind it is proper to assume that freight rates will be high because the cargo must pay the cost of operation, insurance, the interest on the investment and losses due to delays or slowness of movement. It is also held that the return or westbound tonnage will be small. Hence the opinion held by many that even under normal conditions the Hudson Bay route will not be worthy of notice as a competitor of the Great Lakes route.

At Fort William and Port Arthur, the ports at the head of navigation on the Canadian side of Lake Superior, 169,664,495 bushels of grain, enough to fill about 170,000 box cars, were received during the crop year that ended with August 31, 1913. All of this came through Winnipeg, and the average train haul was more than 700 miles, showing that the source of the grain was at an average distance of 300 miles west of Winnipeg.

Fort William is at the mouth of the Kaministiquia River, commonly known as the "Kam." The river forms a delta with three channels, known respectively as the Kaministiquia, the Mission and the McKellar Rivers, with a total water frontage of twenty-six miles on the three streams. The channels have all been deepened to 30 feet and widened, the "Kam" to 600 feet, the Mission to 500 and the McKellar to 400 feet. At the head of the delta is a 1,000-foot turning basin. The harbor is practically landlocked. At the mouth of Current River, a non-navigable stream, Port Arthur would be little more than a road-

stead on Thunder Bay if it were not for a long breakwater built by the Canadian government. Port Arthur has a water frontage of 5.5 miles, and as Port Arthur and Fort William adjoin, the total water frontage is in excess of thirty-one miles. The two harbors have been nationalized and to all intents and purposes are treated as one by the Canadian government.

Except the very small amount of grain that moves from Winnipeg by way of Duluth, all of the Canadian grain from the prairie provinces that follows the Great Lakes route passes through Fort William and Port Arthur. Coming down the Great Lakes the first important point the grain vessels pass after leaving Thunder Bay is St. Mary's River, with the city of Sault Ste. Marie, Ontario, on the eastern shore, and another city of the same name on the Michigan shore. On the eastern side is the single Canadian canal and lock, and on the American side is the American canal and two locks. Through these three locks in 1912 there passed 72,472,676 tons of freight, enough to fill to capacity 2,415,755 thirty-ton box cars. In 1855, when the first State lock was opened on the Michigan side, 14,503 tons of freight passed through. In four years this had increased to 122,000 but not until 1876 was the 1,000,000-ton line crossed. Sixteen years later, in 1892, the freight was in excess of 10,000,000 tons, and last year all records were broken. In the twenty years ending with 1912, the traffic through the three canals increased 546.2 per cent.

In 1912 the traffic through the American locks was 45 per cent. of the total freight, 55 per cent. of the total net register tonnage and 44 per cent. of the total number of passengers carried. In other words, despite the two locks on the American side, more freight and more passengers were handled through the single lock on the Canadian side, the excess in freight being explained in some degree, perhaps, by the fact that the Canadian lock was in operation three days after the closing of the American lock.

The changes in the dimensions and carrying power of freighters on the Great Lakes within fifteen years has been notable. Of the 768 freighters that passed the Sault in 1899 only 165, or 21.4 per cent., were over 300 feet in length, while of the 763 passed in 1912, 453, or 59.37 per cent., were over 300 feet in length, and 298, or 39 per cent., were over 400 feet in length, as compared with 41 such vessels in 1899.

The first freighter over 500 feet in length appeared in 1904, but the next year there were 23 of them and the number has steadily increased, 139 vessels more than 500 feet in length having passed the Sault in 1912. Four freighters more than 600 feet in length passed the Sault in 1907, and five years later, in 1912, there were 12. A freighter 625 feet in length is under construction at Port Arthur and plans for others are either under consideration or in course of execution. It is believed that the 700-footer will appear in the near future.

Of the 569 steam freighters that passed the Sault in 1900 only 76 carried cargoes of more than 4,000 tons, and 493 carried less. But no cargo of more than 10,000 tons appeared until a single ore vessel with such a cargo came down the lakes in 1904. In 1912, of the 735 freighters, 362, or 49.2 per cent., carried maximum cargoes of more than 4,000 tons, and 125, or 17 per cent., carried more than 10,000 tons, and 29 carried more than 12,000 tons. The largest cargoes handled during the present year were 435,000 bushels of wheat on one boat out of Fort William, and 13,500 tons of coal out of Cleveland on another.

Of sailing vessels 310 passed the Sault in 1900, and 118 in 1912, a decrease in twelve years of 61.9 per cent., and these figures, when compared with those from each of the bodies of water, may indicate rather emphatically and conclusively that the day of the sailing vessel on the Great Lakes is rapidly drawing to a close. In 1888 sailing vessels carried 33 per cent. of the traffic that passed the Sault, 23 per cent. in 1902 and 6 per cent. in 1912.

I have said that there were three locks at the Sault, two on the American side and one on the Canadian. On the American side a third lock is well advanced towards completion and a fourth is being built. Announcement has been made within six weeks that the Canadian government has taken steps to secure land for another ship canal and lock between the present lock and the river. It will have a depth of thirty-one feet over the miter sills and be so arranged that the depth can be increased to thirty-five feet without interfering

with navigation. The cost is estimated at \$20,000,000, and it is planned to have the work completed by the time the new Welland Canal is ready for use, or in about four years. The lock depth of this ship canal is to be the same as that of the enlarged Welland Canal, perhaps in furtherance of some general plan of the Canadian Department of Marine and Fisheries to supply a channel of thirty-five feet in depth from deep water below Montreal through to Fort William. Possibly there is a hope that some day ocean-going ships will load at Lake Superior ports and cross the Atlantic without breaking bulk.

Of the waterway projects heard of in Western Canada the Georgian Bay Canal is perhaps the most popular. Beginning at the Canadian Sault, one plan contemplates the deepening of the channel where necessary north of Sugar and St. Joseph Islands into North Channel and thence north of Manitoulin Island to one of the mouths of French River, to a depth equal to that of the proposed ship canal at the Sault and the enlarged Welland Canal. The route of the Georgian Bay Canal begins at the mouth of French River, follows the river to Lake Nipissing and by way of the Mattawa reaches the Ottawa, its outlet to the St. Lawrence. In the distance of 430 miles the proposed canal would have a gradient of 60 feet to overcome between the mouth of French River and Lake Nipissing, followed by a fall of 621 feet between Lake Nipissing and Montreal, an average fall of about 1.44 feet to the mile.

As to eastbound business it is claimed that in addition to the great quantities of grain that promoters say would follow this route it would annually attract 100,000 tons of copper ore and a portion of the 16,000,000 tons of iron ore that yearly pass the Sault. It is also claimed that this iron would be carried to Cape Breton and be exchanged for return cargoes of Nova Scotia coal. Also, that the eastbound tonnage would include farm, dairy and packing house products. The supporters of the project claim that the canal would provide a short route for lake freighters to the seaboard, that it would revolutionize the trade of the Great Lakes by diverting it by way of the lower St. Lawrence to the Atlantic, to the advantage of Montreal, Quebec and the Maritime Provinces, and that it could be built for less than one-third of the cost of any other ship canal between the Great Lakes and tidewater. This is looked upon and favored by the grain growers of the West as a government project, but as a matter of fact a company has been organized to build the canal. It is only in the West and along the route of the proposed canal, however, that the reasons mentioned are advanced in support of the argument that the project deserves and should receive the energetic support of the Canadian government. South of the proposed route such a canal is not favored, and Toronto is very close to the center of opposition.

One of the arguments against the Georgian Bay Canal is the probable cost, as to which three estimates are before the public. The lowest is \$100,000,000, by the promoting company, which figures an annual net revenue of 4 per cent. on this basis; the second is \$150,000,000, and was made by United States Senator Charles E. Townsend of Michigan, when, in his speech on the reciprocity bill, he advocated international cooperation in the construction of such a canal. The third estimate says the cost would not be less than \$150,000,000 and might reach \$200,000,000, and that on portions of the route there are shallow waters upon which no expenditure has been contemplated, which would greatly delay navigation and materially affect the commercial value of the waterway. Another opposing argument is based upon the crookedness of the proposed route, together with the claim that vessel masters could not stand the strain of navigating through such a tortuous and highly dangerous channel.

A vital question in connection with the Georgian Bay Canal project is as to the source and character of the westbound tonnage. Let us admit for the moment that the route would be practicable for eastbound grain, but what would the grain carriers haul from Montreal to the head of the lakes? It has been suggested that on both this and the Hudson Bay route Nova Scotian coal would figure very largely, but it is to be borne in mind that it is now possible to carry such coal by water from Nova Scotian ports to Quebec, Montreal, Prescott, Kingston, Toronto and ports on all the upper lakes, but competition with Pennsylvania coal acts like an impassable wall and stops the Nova Scotian

coal at Montreal. Moreover, it is to be borne in mind that with the completion of the Panama Canal and our Barge Canal, it is expected that lumber from the Pacific coast will be laid down on the upper lakes in direct and successful competition with lumber cut on the upper lakes watershed. Look where we might, therefore, there would not be sufficient freight in sight to fill more than 10 per cent., if so many, of the boats that might use the canal, and what freight did offer would probably be not much more than a package business out of Montreal. And this, in consequence of the increase in manufacturing enterprises in the West, would possibly be in a constantly diminishing quantity, according to those who profess expert knowledge on the subject.

I will make only a passing reference to the work on the new Welland Canal and along the St. Lawrence. It is well known that work has already been begun on the project to widen and deepen and, for part of the way, provide a new route for the Welland Canal. The plans call for thirty-one feet of water over the miter sills, with other features identical with those to be included in the new lock at the Sault. The Welland Canal locks are to be long enough to accommodate any vessel likely to be operated on the Great Lakes during the next generation. Also, the number of locks will be reduced about 75 per cent., and the movement of vessels will be proportionately expedited. To take care of the business expected to come with the opening of this canal an expenditure of about \$3,000,000 on harbor improvements is contemplated at Hamilton, while at Toronto plans are being carried out that call for the expenditure of fully \$20,000,000 for harbor improvements over a period of ten years. The improvement of other Canadian harbors on Lake Ontario on practically a proportionate scale is also under consideration. The general plan calls for the deepening and enlargement of the St. Lawrence canals and locks, and the deepening of the channel where necessary, to accommodate any vessels that may be able to pass the enlarged Welland Canal.

In the movement of Canadian grain from both American and Canadian ports on the Atlantic, two of the major factors have been the ocean freight rates and ocean insurance rates, concerning both of which many complaints have been made by the Canadians. Last July the Canadian government decided to send Chairman H. L. Drayton, of the Canadian Railway Commission, to England, to discuss with the Imperial authorities the question of government control of the charges made by shipping companies for the carriage of ocean-borne freight. Other negotiations had been opened between Canada and the British government in February, 1910, but were dropped. In the present case Mr. Drayton sailed for England about August 1st, and between that date and the publication of his report, the subject of ocean freight rates was exhaustively discussed in the newspapers and elsewhere.

It was claimed in some quarters that all of the benefits to Canada under Imperial preference were nullified and made valueless by the high rates demanded by steamship companies on westbound shipments to Canadian ports. It was shown that the 1912 rates from the United Kingdom on some of the chief articles of value imported into Canada were from 12.50 per cent. to 33.33 per cent. higher than the 1910 rates. It was claimed that the chief cause of the agitation for government control of ocean freight rates was the allegation by Canadian milling interests that the high ocean freight rates on flour as compared with rates on grain made milling in Canada for the British market unprofitable. On the other hand, it was claimed that from the steamship owner's viewpoint very little difficulty would be experienced in justifying a differential of at least seven shillings sixpence per ton. Representatives of the flour milling companies of Canada, in conference with Minister of Trade and Commerce George E. Foster, asked if action could be taken relative to discriminatory rates that unduly favored the raw product. Steamship rates had increased from 50 to 100 per cent. in recent years, they said, while during the same period the rates on flour were from five cents to twelve cents per hundredweight higher than on wheat. This discrimination, they alleged, was heavily in favor of foreign and British millers, and had, in fact, ruined a good export business.

One writer pointed out that the enormous agricultural products of Canada must find a market with unerring regularity, and in order to assist the farming

community to find the readiest and the most profitable market, he said, Canada had spared neither genius nor money, and that to bring these products from far and near to the shipping ports of the Atlantic, Canada had expended more than \$1,000,000,000 in railway subsidies, waterways construction, harbor and docks construction and the improvement of the St. Lawrence route. The North Atlantic Steamship Conference, the same writer said, had increased the rate on wheat from 6.5 cents to 13 cents, and upon flour from 9 to 17 cents per hundredweight, representing an increase in transportation costs of more than \$500,000 annually. Mr. Drayton reported that the British Board of Trade saw great difficulties in establishing a joint tribunal for the control of ocean freight rates, but knew of no reason why the Imperial government should not discuss with the Canadian government the question of holding a joint inquiry into the rates charged and facilities afforded by shipping companies engaged in the trade between the United Kingdom and Canada. He set forth the argument made by ship owners that increases in the cost of operation justified increases in rates, and discussed the differences in size of eastbound and westbound cargoes. Mr. Drayton said that governmental control would be difficult, and held that it would be against the interest of the carriers and the commerce of the country if a vessel, unable by reason of the state of the market to obtain a cargo at regular rates, could not be loaded with goods that were only moved by reason of the special inducement that a "cut" at the last hour afforded. At the same time he saw no reason why standard maximum rates should not be fixed by an independent authority and no increases allowed except with the consent of that authority.

Complaints have also been made by the Canadians because of the difference in the insurance rates on grain from Montreal, Halifax and St. John as compared with the rates from Boston and New York to Liverpool. According to official figures the grain marine insurance rates per \$100 during 1912 were as follows:

From Montreal.	Cents.	From Halifax and St. John. Cents.	From Boston and New York. Cents.
May 1 to Sept. 15.....	25.0	22.5	15.0
to Sept. 30.....	27.5	Entire year.	Entire year.
to Oct. 15.....	30.0		
to Oct. 30.....	37.5		
to Nov. 15.....	40.0		
to Nov. 25.....	45.0		
Average.....	34.16		

The average rate out of Montreal, according to these figures, was 127.7 per cent. higher than the Boston and New York rate, and 51.8 per cent. higher than the Halifax-St. John rate.

This is a subject of long standing and is apparently no nearer a settlement than it was ten or a dozen years ago, although within eighteen months it has taken on a new phase. Almost two years ago the organization of a "Canadian Lloyd's" was suggested by the Borden government and has been earnestly advocated by Canadians in Canada and England ever since, but with no very tangible result to date. On August 18, 1912, Hon. J. D. Hazen, the Canadian Minister of Marine and Fisheries, was quoted as having said the day before, in London, Eng., that "rightly or wrongly, shipping people feel that in view of the marked improvements that have been effected in the navigation of the St. Lawrence, including the provision of up-to-date aids to navigation, the rates charged for insurance out of Montreal are unnecessarily high and they believe this is so because the underwriting community do not sufficiently realize the state of affairs existing to-day." It is admitted that rates from and to the St. Lawrence ports are higher than to and from the United States ports partly because of the prevalence of ice and fog in the Gulf and St. Lawrence River, but there are other handicaps. For example, one year ago there was a vigorous

demand in Canada for the reform of the pilotage system on the St. Lawrence, and on December 18, 1912, the Canadian correspondent of the London, Eng., *Times* said in that newspaper: "The Shipping Federation of Canada, representing over half a million tons of ocean and coastwise shipping, is petitioning the Dominion government for a Royal Commission to inquire into the whole (St. Lawrence River pilotage) service. Many accidents during the last ten years, including the recent stranding of the Royal George, have been ascribed to faulty pilotage. . . . There is hardly any doubt that the pilotage service is unsatisfactory, while more than once the political influence behind the pilots has been strong enough to resist any thorough government inquiry or an adequate reform of the system."

At the present time there is pending before the Canadian government a protest aimed directly at American shipping. The coastwise trade laws of Canada and the United States are similar, in that neither country permits a vessel under a foreign flag to trade between two domestic ports. Two years ago, however, the Canadian government was of the opinion that the Western Canada crops should be moved with the maximum rapidity and therefore suspended the coastwise trade laws, thus permitting American freighters to load at Fort William or Port Arthur and discharge at Montreal or any other port. The Canadian government held that the Canadian tonnage was insufficient to take care of the grain that was likely to be offered at the head of the lakes before the close of navigation.

The Dominion Marine Association is the active body in making the present protest. It is reported and generally understood in Canada that the Canadians are willing to permit the coastwise trade laws to remain in a state of temporary or permanent suspension if we will allow the Canadians the same privileges that they grant us, that is, if we will permit them to load at one American port and discharge at another. In the articles that appeared in certain Canadian newspapers in advance of the conference between representatives of the Canadian Marine Association and Hon. George E. Foster, Minister of Trade and Commerce, it was intimated that the Dominion Marine Association was of the opinion that the Canadian Pacific Railway was responsible for the movement of a large part of the Canadian grain crop by way of Boston and New York. At the conference, however, it was pointed out by the vessel owners that facilities at American lake ports were superior to those at Canadian, and that with more ocean vessel tonnage available and lower ocean freight and insurance rates in effect from Boston and New York, it was natural for the grain to follow the line of least resistance, the Buffalo-New York route across American territory to the sea.

It was also claimed that American vessels had been forced into the Canadian coastwise trade on the Great Lakes because the American government had placed an embargo upon Canadian grain at Buffalo, to enable American shippers to get their own western grain through without interruption from Canadian cargoes that were being rushed down the lakes against time. There were two sides to the general question, even in Canada. The Canadian grain brokers said that the suspension of the coastwise trade laws enabled them to obtain better rates by way of the Buffalo-New York route than they could secure by the Montreal route. It was also held that the American vessel that carried coal to the Thunder Bay ports was entitled to a return cargo of Canadian grain, especially when the vessel owner would rather quote a low rate than return in ballast. Consequently, in view of the lack of facilities at Montreal, and of the high ocean freight and insurance rates out of that port, it was but natural, the grain brokers said, that Canadian grain should move in large quantities by way of American ports.

I want to add parenthetically that it is not to be assumed from what has been said that conditions at Buffalo are ideal, especially in respect of rail transportation. Thus, in discussing the car shortage of one year ago the *Northwestern Miller*, on November 13, 1912, said that at Buffalo boats could not be unloaded, the grain could not be hauled and that the car shortage seriously injured both export and domestic business.

Mr. Foster, the Minister before whom the deputation appeared, did not give any positive assurance, but he intimated that in view of the increase in

Canadian vessel tonnage, the regulations might not be suspended this year. In view of this position it is of interest to note that on October 16th, two weeks ago to-day, Manager G. L. Parsons, of the Goderich Elevator and Transit Company, said that there was then a shortage of 250 cars at Goderich, a Lake Huron port in Canada. Assuming that conditions were normal, this may be accepted as indicating that there was or very soon will be a corresponding shortage elsewhere along the Canadian side of the lakes. If there is a car shortage the tendency will be for the grain to move by water rather than by rail, although the general tendency in recent years has been the other way. Of the 216,000,000 bushels of grain shipped east from Fort William and Port Arthur during the five years ending with 1907, 9.71 per cent. moved by rail, while of the 403,650,000 bushels moved during the next five years, 14.02 per cent. followed the rail route. Putting the same fact in another form, the water shipments during the second period showed an increase of 86.75 per cent. over the first period, and the rail shipments an increase of 183.07 per cent. Comparing two extreme years, water shipments in 1912 showed an increase of 188.9 per cent., and rail shipments an increase of 573.2 per cent. over 1903.

Let us consider for a moment the movement of Canadian grain tonnage across American territory. Of the 62,000,000 bushels shipped from Fort William and Port Arthur in 1908, 29.14 per cent. was landed at American ports, while of the 143,557,000 bushels shipped in 1912, 41.87 per cent., or 185.5 per cent. more than in 1908, was landed on American soil, an increase that from whatever cause seems to me to have been amazing. It may be of special interest to the Buffalo gentlemen who are present to know that the Canadian grain receipts at that port for the crop year ending with August 31, 1912, were 148.5 per cent. greater than in 1909, and that during those four years Buffalo was the only American lake grain port that showed a steady and regular increase from year to year.

Now, as to the Atlantic ports from which Canadian grain was shipped. I will speak only of wheat, and the ports were Portland, Me., Boston, New York, Philadelphia and Baltimore. The period covered is the six years ending with 1912. Portland, in 1912, showed an increase over 1907 of 5.26 per cent. in the amount shipped; Boston, 36.23 per cent.; New York, 453.67 per cent.; Philadelphia, 476.18 per cent., and Baltimore, away south and with an all-rail haul from the Great Lakes, 1,343.85 per cent. I submit, in the first place, that the small increases in the Portland and Boston tonnage constitute a sufficient answer to the Dominion Marine Association's allegation that the Canadian Pacific is deflecting shipments to those ports, and in the second place that New York, even with her 22,566,120 bushels of Canadian wheat in 1912, and her 453.67 per cent. increase in five years, is not holding her own in the trade, especially when it is considered that in 1912 Baltimore handled 1,239,793 bushels more Canadian wheat than New York did in 1907.

Clearly, the Canadians are thinking in terms of empire and of decades rather than in terms of provinces and a single year. They say their three prairie provinces and the hinterland to the north will become the world's granary, and the fact that Canada is already in fifth place among the world's wheat producers and is rapidly advancing to fourth place, may indicate that the claim is not without basis. Also, it is a fixed policy with an increasing number of Canadians to keep Canadian commerce in Canadian channels. But commerce pays little attention to political boundaries and political walls; rather, especially in commodities necessary to human happiness, it follows the line of least resistance, the channel that provides the lowest rates, the maximum facilities and the highest speed, and in this view of the situation our line of action is clear.

JUDGE CHARLES F. MacLEAN (New York): The facts so interestingly presented by our Secretary are so surprising and startling that they seem to call for appreciation as well as applause. If it be in order, I would like to move that we commend to the Committee on Resolutions the desirability of appointing a committee to make inquiry as to the facts presented by the Secretary, and also as to whether, with Federal co-operation, it be not practicable for the State of New York to afford an outlet for the grain and other commerce which comes to Montreal, down Lake Champlain, and through a shorter route to the seaboard through the port of New York. Such an outlet, if practicable, would spare the Canadian trade the dangers of the passage of the St. Lawrence and

would enable that trade, especially the grain, to come into the State of New York and the city of New York, to our great advantage, as well as the great advantage of the Canadian shippers.

Motion seconded and carried.

DELL L. TUTTLE (Buffalo): I would ask that Judge McLean be added to the committee. He has made a study of the subject.

PRESIDENT HILL: That will be done.

CAPTAIN CLARK: I would like to add that they should investigate the feasibility of drawing some of that trade across from Sackett's Harbor to the Barge Canal at Rome.

PRESIDENT HILL: I take it to be the intent of the mover of the resolution that the matter be transmitted to the Committee on Resolutions for such action as it may think wise.

JUDGE McLEAN: My desire is that it should go with the commendation of this meeting.

PRESIDENT HILL: If it is transmitted, it will carry that commendation. I will appoint the committee as follows: Hon. Charles F. MacLean, New York, chairman; Hon. John R. Myers, Rouse's Point; S. Christy Mead, New York; Howard D. Hadley, Plattsburgh; Walter C. Witherbee, Port Henry.

This virtually completes the program for the afternoon, with the exception of the meeting of the Committee on Resolutions. That committee will meet immediately. We will now adjourn to 8 o'clock this evening.

THURSDAY EVENING SESSION.

Called to order at 8 P. M.

PRESIDENT HILL: The Convention will come to order. The next is an illustrated address on "The Collection and Distribution of the World's Commerce," by Robert H. Rogers, of the General Electric Company, Schenectady. Those of you who were fortunate enough to hear Mr. Rogers last year will recall the fact that his message was a very instructive one and I know to-night we are to have even a better address than he prepared for us rather suddenly on the occasion of our last meeting. Mr. Rogers then very kindly filled the position on the program assigned to another speaker who was not able to be present with us on that occasion. I take pleasure in introducing Mr. Robert H. Rogers of Schenectady. (Applause.)

COLLECTION AND DISTRIBUTION OF COMMERCE.

MR. ROGERS: Mr. President, Ladies and Gentlemen: In my treatment of the subject "The Collection and Distribution of the World's Commerce," I will not show many pictures of things that we are ordinarily familiar with, and on account of the short time at my disposal I will have to omit statistics altogether.

If we dissect a heavy rope we find that the little fibres are twisted together to form a thread, that the threads are joined together to form a yarn and when the yarns are twisted together it forms a strand and the strands form the rope. You will find much the same condition in the collection of the world's commerce. For if we go back to the small producers, we find that they take their little products to the market, where they are combined with the products of other similar producers and taken to the large, wholesale market, and then the wholesale markets transmit their accumulations to the great seaports where the cargoes for ships are arranged for. This is the formation of the rope of commerce.

[Stereopticon pictures were then shown of human burden-bearers in the Philippines, methods of transportation other than by steam or electricity in the

Philippines, Cuba, Peru, Ecuador, Corea, Burma, China, Ireland, Manchuria, Norway, Belgium and Denmark. Pictures were also shown of the Bush Terminals, of a steel sailing ship from Australia, of piers, harbor scenes and docks in New York, Boston, New Orleans, St. Louis, Savannah, Brooklyn and Panama, besides several views of the machinery used in moving goods when loading and unloading vessels, each being described by Mr. Rogers.]

Nothing is so marked in history, Mr. Rogers continued, as the persistent efforts of commerce to establish itself on a safe, permanent and profitable basis. There are three fundamental conditions necessary to commerce — means of transportation, freedom of exchange and safety. The Phoenicians of Tyre and Sidon were the first people to practice commerce as we understand it to-day, that is, the interchange of goods between different peoples as distinguished from ordinary domestic trade on the one hand and the transportation of the munitions and spoils of war, on the other.

They were the earliest navigators and they were in their highest degree of activity at least a century before the beginning of the Christian era. Thus early did the waterways enter into the commercial activity and welfare of the people. Their ports were destroyed and in time Carthage, Athens and Corinth became the center of things commercial. But they in turn were destroyed by Roman invasions, but Carthage is making a strenuous effort to get back on its feet through Mr. Jones and the Black River Canal. (Laughter.)

The next development in commerce was in Genoa, Naples and Venice. These cities came into prominence and soon absorbed practically all of the commercial work of the very limited world at that time, but with the advent of the fourteenth century the compass was perfected, men became bold and ambitious to extend the boundaries of their world. America was soon discovered and the way around the Cape of Good Hope to the rich East Indies was made known.

By Henry II's time London and the towns of Germany had assumed leadership, when the ever-increasing tides of commerce with Holland and India were strong in their particular lines. The seas were swept by pirate ships, wars made commerce hazardous, little knowledge prevailed as to the conditions of supply and demand in the various countries, and credits were dubious or did not exist.

To-day we find commerce equipped with sure and rapid means of transportation and the seas are equally free to all and science has provided undreamed-of devices for physical safety and mercantile law has provided financial safety. Prompt intelligence is available regarding every producing and consuming community in the world, so that commerce is now crowding the waterways and railroads of every civilized country, and now the demand is for more and better waterways and more and better railroad facilities. But most of all it requires terminals to handle transportation, storage and distribution at costs and with despatch in keeping with the extent of modern times.

The persistent but bloodless war that has been waged by commerce to get a firm footing has been a constructive war and not a destructive one and the men who have and are devoting their lives to its furtherance are not heroes, but, better, they are benefactors of the entire human race; they are putting runners under the sled of human progress; one is education and the other is commerce.

PRESIDENT HILL: We are now to have an illuminating lecture on the subject of "Barge Canals of the State of New York," by our well and favorably known State Engineer and Surveyor, Hon. John A. Benschel, whom I take pleasure in introducing to you now.

NEW YORK BARGE CANALS.

JOHN A. BENSEL: Mr. Chairman, Ladies and Gentlemen: The arrangements which have been made by the managers of your Association are such that it will not be possible for me to do other than to show by the pictures the present status of the Barge Canal improvement and the views which will be shown will give you some idea of the work in so far as it is completed, and also to show the magnitude of its completion.

In a brief way, the Barge Canal is now completed to the extent of about 250 miles of canal made to the section contemplated and all but entirely completed, with the remaining portion of it, showing 470 miles in a fair state of completion, which might be estimated at being about 60 per cent. completed. All of the important structures are either completed or more than 80 per cent. completed, that is, the dams and locks, the movable dams of the Mohawk, and a very fair start has been made toward the completion of the work necessary to put the terminals into operation.

The people of the State of New York are to be congratulated upon the fact that not only will the canal operate in a commercial way greatly to the advantage of its people, but the demonstration of the past year, when the floods were higher than any reported height in the State previous to that time, was that by the creation of the State dam for the first time in its history the city of Utica did not suffer anything from flood damage.

In the preceding twelve months construction work has been done to the amount of something over \$13,000,000. The total amount of work to date on the Barge Canal paid for amounts to over \$64,000,000, and contracts remaining to be done will be completed for about \$18,000,000. When this work is completed, and, in fact, it may be said before its entire completion, the State will be confronted with a new and most important problem, and that is what is to be the form of management of this new waterway.

As you are aware, the passage of the ancient mule which operated along the canal has its days of existence marked and numbered, and with this mule will go all of the prehistoric trappings of the existing canal system, to be succeeded by the new mechanical devices for the operation of the canal, which will need in a few years now the most careful consideration by a body such as yours, and, I take it, the people as a whole.

You are interested in making the best practical use of this new commercial artery and the management of it will be one of the important features by which it can do its best work. There must be and will be at any time much divergence of opinion as to how to best fit the new appliances and very necessary management to the Constitution of the State as it exists, and the practical methods which must be considered for its development along practical lines.

It is with some pleasure, however, that I am able at the present time to direct your attention to this new necessity which, of course, can only arise as we approach the completion of the work as a whole, and we have ample time if we start now to consider the possibilities and the necessities of the case, if proper attention is given to all that the new construction means.

Tracks have been laid and are well on towards completion for the installation of the electrical apparatus for the movement of goods and the operation of the movable dams on the Mohawk. The aggregate cost of this installation is as great as that of a modern battleship and consists of appliances which can only be handled by people technically trained, and will therefore call for a different sort of maintenance, in my opinion, than anything which has existed in the past.

So, with the completion of the actual construction work but draws nearer the time when it will be necessary for the State to maintain appliances in the way of dredges, derricks, etc., which will be necessary for the maintenance of this new creation. No comparison can be drawn as regards the new necessities with those of the past. Something may be learned from the operation of the canals of other countries, but the Barge Canal in trade is a thing of itself, without duplication in any other country of the world. Much of the work that has been done will be damaged and useless unless it is properly main-

tained and operated, and all of the usefulness of the new canal will be destroyed unless a large view of the necessities of the case is taken and the proper method of handling the situation is put into operation.

It has been some time since the report of the Commission appointed by the Legislature to consider this matter was made and I would recommend a careful perusal of this report, as it shows some of the necessities of the case, and, legislation to fit the new condition being necessary, this should be part of the legislative program of next year or the year following.

Work in regard to terminals is progressing with considerable rapidity in so far as the construction of permanent features is concerned. One of the terminals has already been put into use in a commercial way. I will not deal further with the problem but will, through the pictures on the screen, endeavor to show you the actual state of affairs at the present time.

The first is a map showing the location of the Barge Canal throughout the State. The stretch in the east and west is practically parallel to the old Erie Canal and that north and south is practically parallel to the old Champlain; so here you have a view of the different sections of the canal, the rock section, the river section and the lake section, and up above you see the size of the standard lock.

Here is a view which shows the different sizes of the canals as they have gone on from the year 1817. This gives a fair idea of the growth and the ideas people have had as to commercial interests. The same growth of commerce is shown in the size of the locks, those at the top of the picture being built in 1793 and early in 1800 and this bottom one shows the size of the new lock — 45 by 328 feet.

This is a view of the sizes of boats that have been used on the canals up to date, with the possible boat which may be used on the new canal. A comparison of this craft and the other shows the growth of the commercial demand for carriers on the canals in the past 100 years.

Here is a view showing something of the manner of the prosecution of the work. The excavation has been carried on during the summer with water in the canal as shown in this picture.

Here is another view of work being carried on while the canal is free of water by the same kind of excavator.

The next picture will be a motion picture, showing some of the larger machines at work. This particular machine is a cantilever form of crane; first you will have a general view, then dumping, and finally material thrown on the spoil bank.

The next view is one of the big machines in operation, showing the material being deposited in the hopper and then passing through a revolving screen to separate the larger stones from the small, and then finally a general view of the machinery. The middle machine is the one that separates the material deposited by the two on the side. Here is a view of the revolving screen separating the stone.

Here is another type of dredge excavating and carrying the material on a bucket conveyor. This type of machine was used extensively when the French were doing the first work at the Panama Canal and has not been, in general, as successful or economical as the bucket type of dredge shown in the previous picture.

Here is a dipper dredge excavating material. This is the ordinary type of dipper dredge loading material into dump cars to the right, which are not shown here.

This is a picture of a rock-breaker which breaks the rocks by raising and dropping a pestle weighing about eighteen tons, and carried in the bow.

The next picture is of a derrick for the removal of material of the revolving type. This particular one shows one with two booms, which is a little unusual. This is a section of the canal in the vicinity of Lockport which consists almost entirely of rock and this particular excavator was enabled to do work almost double the amount previously done by the ordinary one-boom derrick.

This is one of the large excavating machines in the vicinity of Rochester, known as the bridge conveyor, which takes the material and conveys it over to the spoil bank on either side of the canal.

Here is what is known as a gate placed across the canal, to be operated in case of any sudden break, or in case of the need of unwatering any portion of the canal. The gate is counterbalanced and can be operated by hand or electrical machinery and is one of the most important features for safety on the canal.

The Barge Canal work has made it necessary in many of the streams to create new bridges. This particular bridge is a concrete bridge recently erected over the Oswego River in the city of Fulton. The Barge Canal will operate under the inner arch in the picture.

This is a view of one of the so-called movable dams used in the Mohawk River in order to raise it to the flood level. These legs are dropped down when the dam is put into operation and then the shutters go on one side of them to make the dam of the required depth. In the non-navigable season the legs and shutters are drawn up and the Mohawk is allowed to follow its regular channel, so that the flood damage may not be excessive.

The next view shows one of these dams ready for the winter season, with the shutters and legs raised. At the right-hand side of the picture is one of the new locks which provides the means of getting from the level on one side of the movable dam to that of the other during the navigation period.

The next picture will be a motion picture of one of these dams in operation. You will notice the shutter being raised and the water passing through.

This is a picture of the work going on at the present time at a place called Scotia, not far from the city of Schenectady. At this locality for, I think, something over three years the work was attempted to be completed by the use of ordinary methods. Finally that work had to be abandoned and at the present time they are busy sinking caissons down to about eighty feet below the level of the water in order to shut off any possibility of water passing underneath the dam when it is finally completed.

This is a view of the work as it stands at the present time at what is known as the Glens Falls feeder, where a dam is being erected in order to raise the water to a level to make it possible to pass down the small canal in order to feed into the upper level of the Champlain, which work, as you may know, is well on towards completion and is of a very solid and substantial character.

Between Waterford and Schenectady are two dams, each about half a mile in length. This particular view shows you one of the dams, known as the Crescent dam, not yet quite completed, and with the flood waters passing through the apertures which have been left until such time as we are ready to close the apertures to raise the level of the water to the navigation level.

The next view shows the entire sweep of the dam, starting from one side of the picture and ending at the other. This is about 2,000 feet in length. Here are the gates for the passage of water and here is a smaller dam. At this point we will take power from the water that will pass through a wheel in order to operate the gates, to drop from the level of the Mohawk River into the Hudson.

Here is a view of the other dam below Schenectady, known as the Visschers Ferry dam, with water passing over it. These two dams create lake levels of quite considerable proportions between Schenectady and Waterford.

Here is a view of the lock at the dam that you last saw which will make provision for getting from the lower lake level up to the upper one.

To provide necessary water for the operation of the canal, to store it up so that it may be used at the times of low water, two large dams have been created, one at Delta and another at Hinckley. The view before you is one of the dam at Delta that is now in a state of completion and which, as I said before, operated last spring not only as a feeder to the canal system, had it been in use, but also stored the water and prevented the floods from damaging the city of Utica.

This is a view of the completed dam at Delta. Here is a small canal passing over that bridge up the flight of locks to the right, known as the Black

River, and the main dam in here, and the overflow comes over here into this pool and from the small pool there to the right we have regulating gates so that we can pass the water in almost any quantity that may be needed into the stream and thence on into the canal system. The stream is the upper waters of the Mohawk. The canal changes before it gets here and takes a bend and goes to the north.

This is a view of the stream called West Canada Creek, at Hinckley. This is a recent photograph. The work is in a very fair state of progress. But from the top of these concrete pillars that you see we still have to go, I think, about thirty feet. This will make a lake about nine miles in length.

The next will be a motion picture showing the construction of one of the locks near the city of Utica, giving a general view, the work of excavating, and then a view within the lock walls showing the train and the engine handling concrete, and other operations. The comparative size of the lock wall can be measured by the size of the man shown in the picture. There is the lock wall being built, from which you can get a fair idea of their comparative size.

This is a concrete machine at work, showing the passage of the concrete to the lock walls.

The next view shows the foundation of a lock being prepared, the driving of the necessary piles for the support of the bottom, etc. All you see before you is the building of one lock.

The next is a picture of the pile-driver at work.

This is a view of one of the locks just completed for the Champlain Canal at the village of Mechanicville. This particular lock was cut through an existing dam that crosses the Hudson River at this point.

This is a view of the end of the State's Barge Canal system at Waterford and over to the right you may see the existing size of the canal as shown in its locks, and directly in the foreground is the new size of lock. This lock in one lift takes what three lifts took before; five locks between the elevation of the Mohawk and the Hudson take the place of fifteen in the old.

At the city of Lockport have been built two locks to replace five old ones. The motion picture shown was made in an effort to give a panoramic view of the Lockport locks.

Here we have a view of the Lockport locks with the new bridge which has been made necessary. Over to the extreme right you may notice the old locks and in the immediate center of the picture is the new lock, showing its relation to the old dimensions. This is a little closer view of the work in operation; to the right is the old construction and to the left is the new work. These new locks are completed but have not been put into operation for this year.

The next is a motion picture showing a fleet of boats passing through the completed locks.

This is a view of work being done which is practically the last link in the chain of construction between the Hudson River and Buffalo. You will note the canal at high level and the water down below. This is well along but will take six months to complete.

This is work shown on the terminals; driving concrete piles at the Albany terminals. This is a view of the Albany site for the terminal before any work was started. Here you see a lot of material ready for the making of concrete piles. And here a view of some of the piles ready for use. The next view shows the driving of the piles.

Here is another view of the dock wall and the top of the piles ready to receive the dock covering. Here is a view of the completed wall, the filling not yet being placed in the rear, the ties tying the structure back to firm ground.

[There were then shown in succession a number of views of terminals in course of completion, showing methods of construction. These were followed by various views of sections of the canal already completed.]

As I remarked before, a very large part of the canal prism has been excavated and completed and on the map before you you see in red the indications of the finished portions of the work. It practically extends in almost an unbroken line from the city of Utica to Tonawanda. From there on we have it in partial form completed but not entirely so. The **work** down the Cayuga

and Seneca Rivers is in a fair state of progress but is more backward than the main canal portion.

I am obliged to you for your attention and the opportunity I have had of showing you some of the State work, and if your President and any of the members desire to see the portion of the work lying nearest to this city, means will be provided by the Engineer's office for conveying you there, and I hope you will make such inspection on Friday or Saturday, if you see fit.

PRESIDENT HILL: I hope we may have time before we leave for our several homes to avail ourselves of the generous offer of the State Engineer and Surveyor, if it does not interfere with the boat ride, to inspect the work at Waterford.

The last address of the evening is on the subject of "Federal Improvement of Waterways in Northeastern New York." We must not forget that Northern New York has had in times past a very large portion of the canal tonnage of the State. We are to hear now from Captain R. D. Black of the Corps of Engineers, United States Army, at Albany. (Applause.)

FEDERAL IMPROVEMENT OF WATERWAYS IN NORTHEASTERN NEW YORK.

CAPTAIN BLACK: The title of this paper is "Federal Improvement of Waterways in Northeastern New York."

Every word and phrase in this title suggests a theme for extended discussion. "Waterways" brings to mind the position and functions of waterways in the general scheme of transportation, the role played by transportation in existing economies, and its influence on the progress of civilization; waterways carry floods, waterways create power. Transportation, floods and water power are all factors influencing life and development. The subject may be limited to "Northeastern New York;" nevertheless, the co-relations of the broader subject must be recognized and given due weight, while the more intensive study of the particular case leads into further fields of thought, such as the commercial geography of the Empire State, its resources, developed and latent, its interior and governmental economies, and its relations to the outside world. The "improvement" of a waterway may have for its immediate purpose the betterment of any one of its potentialities for man's benefit or harm and must affect them all. The beneficial potentialities include its uses for navigation and commerce, and the development of power; the harmful lie mainly in the destructive power of floods. A project for "improvement" for any one object requires investigation and thought, historical and creative. "Federal" improvement brings up questions of relative economy and efficiency of organization and execution, constitutional limitations and obligations, policy and even politics.

Yet it is believed that with slightly different emphasis the title represents clearly what the Convention desires and expects of the writer: a short paper on "The *Federal* Improvement of Waterways in *Northeastern* New York" now in progress. Nevertheless, it is submitted that improvement of waterways, wherever situated or by whomsoever undertaken, should be treated always from a point of view of comprehensive recognition of the waterway subject as a whole, and that the co-relation of the various elements must always be kept in view. Hence, my object is to develop, as concisely as possible, a point of view, and from it pass to a brief history of the government's work in Northeastern New York and a description of existing operations, and then, looking toward the future, to give a description of a few of the more striking results of certain studies of a technical nature, and to close with an epitome of existing policy as set forth in full in published Congressional documents.

In times not long passed, the family constituted a complete economic unit, capable of furnishing for itself all of the existing necessities and luxuries of life. The characteristics of life varied with and were determined by the locality. Transportation existed only in the movement of the family. As the superiority of one locality over another for a particular activity became manifest there followed a specialization of local activity, and with it interchange of products

became necessary and commerce had its beginning. Transportation for exploration has always preceded transportation for commerce, and knowledge of what the world had has, therefore, exceeded the power to get it, but has kept alive the demand.

Local specialization of activity, taking advantage of local conditions, follows an economic law whose application is governed only by the relation between cost of transportation between and differences in cost of production of similar commodities in different places. With zero cost of transportation the millenium of the economics of production is reached; production of any given commodity would be limited to the locality where it could be produced most cheaply and each locality would produce mainly one commodity. Except for the small portion of the production of each locality needed for the local consumption, all of the necessities and luxuries of life would be transported for greater or less distances from producer to consumer, and the total cost of existence would become a minimum for any given standard of enjoyment of life, or for any given cost the fulness of enjoyment of the world's goods would be a maximum. Thus by the operation of this law the rate of reduction in cost of transportation is seen to be a measure of the advance of civilization.

Cost of transportation is borne by the ultimate consumer. As charged and paid, it includes at present the actual cost of operation of means of transportation, the necessary interest on the investment for equipment and facilities, a legitimate profit, and frequently an additional profit over and above prevailing rates of interest on borrowed capital. The first is determined by the existing cost of living and by the excellence of the equipment and facilities; the second by the existing money market; the third by the soundness of the investment; and the fourth by the cupidity of individuals. Cost of living is a function of transportation to the consumer. Were transportation facilities never provided in excess of the economic demand, all investments to this end would be sound. Legitimate interest on capital need never be excessive, but individual cupidity often enters. This last, of them all, is most elastic, being definable as *an inverse function of the sense of civic responsibility*.

Of the above elements of cost of transportation, the most difficult to determine in any specific case is the economic demand for means of transportation. Development of resources is a most important object and places a direct responsibility for its proper recognition upon planners and creators of means of transportation; but the chief problem for such planners and creators is to differentiate accurately between development and exploitation.

To advance civilization by reducing the cost of transportation, individual civic responsibility must be fostered and existing facilities must be improved; but the creation of means of transportation must not exceed the demand by an amount sufficient to pass beyond the field of legitimate development and enter that of exploitation.

The ultimate cost of transportation to the consumer includes the direct cost for carriage and an indirect cost which depends upon the time consumed by the carriage; and the value of a means of transportation depends upon the reliability with which the time of delivery at the destination can be predicted. These elements must be considered separately in comparing the pecuniary efficiency of different means of transportation such as rail and water. In considering a water transportation project, whether for the creation of a new route or the improvement of an existing one, the ultimate object is to effect a net reduction in the cost of transportation to the consumers as a whole, and an affirmative conclusion on this point, based on a study of all the conditions affecting the case, is the only safe ground upon which the economic value to the people of the adoption of a project can be assured. In other words, a project for improvement is worthy of adoption when *the annual net saving* to the world to be effected by the improvement, *measured* by the increase of the production, and the decrease of cost of commodities, can be predicted *reasonably* as being greater than the *annual interest* on the *entire* investment for both facilities and equipment, including annual cost of maintenance and operation and interest and profit on the cost of private improvements. So much for the point of view.

Stress being laid upon the word "Federal" in the title of this paper, a short description of the organization under which the government conducts its operations in Northeastern New York will assist in understanding the operations themselves. Under the constitutional right to regulate interstate commerce, the control of all navigable waters of the United States, as distinguished by Supreme Court decision from navigable waters of the several states, vests in the Federal Government. By legislative enactment, improvements to navigation and the enforcement of laws enacted for the protection of navigable waters are carried out by the War Department through one of its branches, the United States Engineer Department. This department is under the Chief of Engineers of the Army, who is responsible directly to the Secretary of War. The Engineer Department is organized into territorial divisions which are sub-divided into Engineer Districts, the divisions being under the charge of senior officers of the Corps of Engineers of the Army and, in general, the Districts being under officers of lower rank. Improvements are carried out with funds appropriated by Congress specifically for each project, and these funds are disbursed by the District Engineer Officers. As a rule, projects for improvement are adopted by Congress after a consideration of recommendations and estimates previously called for by itself, which are prepared by the District Engineer Officers, are reviewed by the Division Engineer, by a special board of Engineers in Washington, and by the Chief of Engineers and are submitted to Congress by the Secretary of War and finally published in Congressional Documents.

Of the waterways in Northeastern New York, the United States now has under improvement Rondout and Saugerties Harbors on the Hudson River, the Hudson itself from Waterford to "deep water" at the city of Hudson, the Narrows of Lake Champlain and the harbors of Plattsburgh, N. Y., Burlington, Vt., and St. Albans, Vt. Studies ordered by Congress are in progress for improvement in addition to that provided by existing projects at Rondout and Plattsburgh and for new work at Port Henry, N. Y.

The history of all of these improvements is intimately connected with the development of the New York state canal system. Indeed, there is ground for thinking that, from the early part of the nineteenth century until the beginning of the decline of traffic on the old Erie Canal, the essential unity of the system of waterways within the state was more generally recognized than in later years.

Long before the Champlain Canal had been thought of as a practical project, the transportation route from New York to Canada via the Hudson, the streams and trails to Lake Champlain and the lake itself, had played a vital part, as a military and commercial line of communication in the settlement of the American colonies, in their struggle for independence and in the early life of the nation. It is interesting to picture the upper Hudson of those days, with its fleet of sailing sloops working up or down stream on tides and threading a tortuous course among the sand bars and islands and through shallow channels, many of them to-day obliterated or marked only by sloughs behind the dikes; while on the lake, a considerable fleet of merchant sailing vessels must have existed long before McDonough collected his war ships.

From New York to Hudson, about 125 miles, the Hudson River has always had ample depth for the largest vessels, the present ruling depths in this section being 40 feet to Kingston and 25 feet to Hudson. The history of improvement of the upper Hudson River, from its beginning to 1852, is described in very entertaining form in a report to the Chief of Engineers by Major Delafield, dated May 25, 1853, published in Executive Document No. 1, H. R. 35th Congress, 1st Session. The earliest projects appear to have germinated in the minds of Albanians for the benefit primarily of their city, though from their inception, the works of improvement extended to the head of tidal action at Waterford. The science of dredging being in its infancy, various schemes of river regulation by diking were studied in comparison with a project for building a lateral canal. But the cost of the canal scheme led to its abandonment and the beginning of works at isolated points for river regulation to improve open navigation. Thus a century ago there was begun on the Hudson River a system of regulation works which as now developed is among the most expensive per mile of river improved and among the most successful in the

world. Had the canal project under the standards of the eighteenth century been adopted, it is interesting to conjecture how much its existence would have retarded the commencement and present development of the open channel work, and through it the development of the Capital District of the State of New York.

Works of improvement were begun by the State in 1797 in an attempt to move the head of navigation for sloops from below Albany to Troy, by the construction of wing dams. In 1800 the improvement was extended to Lansingburg and in 1804 was commenced below Albany. In 1831 the jurisdiction of the river was taken over formally by the general government and a survey from Waterford to New Baltimore was made by Mr. De Witt Clinton, who presented the first comprehensive plan for its improvement. As modified by a Board of Engineer Officers, the project was adopted by Congress in 1834, and an appropriation of \$70,000 was made to commence the work. The project provided for a channel to be created by dredging and to be maintained by confining the currents during low stages between longitudinal dikes. The work was carried on as rapidly as possible with the funds appropriated from time to time, and it is reported that in 1843 a channel with the limiting depth of 7.5 feet at mean low water had been created to Albany. Between 1838 and 1863, operations were carried on by the State of New York along the lines laid down in the project of 1834. In 1866, a project for a channel having a depth of 11 feet at mean low water below Albany and 9 feet above was submitted by General John Newton, and shortly after was adopted. Work in accordance with this project was carried on as funds became available and in 1892 had been practically completed, while in carrying out this project very material assistance was rendered by the State of New York. Though General Newton's project provided for a depth of 11 feet and 9 feet respectively below and above Albany, the dikes as constructed did not fully accomplish their function of maintaining the depths and by 1892 the river had shoaled in a number of places to from 8 to 10 feet. In 1891 by direction of Congress a special Board of Engineers made a comparative study of three proposed projects—one for a depth of 22 feet between New York and Albany, one for a depth of 22 feet between New York and Troy, and one for a depth of 12 feet at mean low water between Coxsackie and Troy. As a result of the recommendations of this Board a new project was adopted providing for a channel between Coxsackie and the State dam at Troy 12 feet deep at mean low water and south of Troy 400 feet wide. The depth was to be obtained by dredging and the channel was to be maintained by altering and amplifying the existing system of dikes in accordance with the general principles established by General Newton. This project as modified in 1898 was practically completed in 1910, when the present project was adopted. Historically, one of the most interesting events connected with the very early work was the successful use of one of the first steam dredges ever built.

On Lake Champlain, Federal improvements, still maintained, began in 1836 with the construction of breakwaters at Plattsburgh and Burlington and dredging in the harbor of Whitehall, and in 1886, with the enlargement of the channel through the marshes at the south end of the lake at the so-called "Narrows." From time to time a number of other projects, chiefly for breakwaters, were undertaken and completed but have since been abandoned. It is interesting to hear old Captain Rockwell, of one of the steamers of the Delaware & Hudson Company's railroad, tell of the days of his boyhood, when the lake fairly teemed with steamers and sailing craft, but lately commerce on the lake has declined. The shores have long been settled and at first the people relied solely on the lake for carrying their heavier merchandise. Then the construction of two railroads paralleling the lake furnished cheaper transportation up and down the shores, though for a long time not sufficiently adequate to cut into the through traffic of the Champlain Canal route to Canada. But the efficiency of the latter remained stationary while the railroads improved. At the same time the railroad policy was to use all available methods to monopolize traffic. Some of these methods have recently been made illegal, while others are under scrutiny with a view to modification. Nevertheless, at present only a small proportion of the traffic can be handled at less cost by boat than by

rail and a radical improvement in water facilities is needed to again cut cost and induce progress. To this end, the Champlain Canal is nearing completion and terminals are being built by the State. The breakwater work on the lake furnishes much of technical interest to the harbor engineer, but a description of it here seems out of place. Suffice it to say that there are now 6,000 feet of crib and stone breakwater which it is thought economical to maintain, and that a certain amount of dredging has been completed lately in the Narrows and at Plattsburgh and St. Albans.

The work which has been done by the government at Saugerties and at Rondout has consisted in protecting the mouths of Esopus and Rondout Creeks respectively from being choked by silt moved by the Hudson River currents or brought down by the streams themselves. At both harbors, longitudinal dikes have been built from the old shore line out to a point where the main channel of the Hudson River is reached, and the harbor channels between the dikes have been dredged from time to time. The depths now being maintained in these harbors are 12 feet at Saugerties and 14 feet at Rondout. Criticism is often made of the expenditure of government funds in small harbors to the detriment of the more important streams, but it must be remembered that a large percentage of the commerce on the principal waterways emanates from the smaller feeders and that the dimensions of craft navigating a river are determined frequently by the facilities offered at the small ports.

The history of the improvement of the Hudson River has been traced from its beginnings to the inception of the present project. The history of the Federal Government's work on Lake Champlain, and at Saugerties and Rondout has been sketched, and the work now in progress there has been dismissed with the briefest general description, to make room for what is believed the Convention is most particularly desirous to be told about; namely, the work now in progress on the Hudson River. To a proper understanding of this work, it is thought that a few statements regarding the problem involved in its undertaking are desirable.

It is believed that the general case is well epitomized in the following quotation from a published report on another project:

"It is estimated that in the formation and recommendation to Congress of a project for improvement two distinct questions are involved.

"One is strictly what may be termed a business engineering problem. Given a certain volume of commerce and a certain waterway, what improvements can be made in the waterway which will best fit it for the commercial needs within a cost justified economically by the saving which will accrue by reason of the improvements?

"The other is, given a certain number of betterments, all economically advantageous, which of all, or what part of each, can be carried out without passing the limit of the sum of money available for such betterments?

"It is believed that these questions should be kept separate. An improper solution of the first will lead up to economic waste in the attempt to solve the second."

Of the two questions quoted, it is taken that we are concerned here only with the first, namely, the business engineering problem, which may be paraphrased as follows: For a given waterway, what is the betterment the necessary investment for which will be most advantageous to the taxpayers? The solution of the second problem rests with Congress.

As applied to a river, any betterment may be defined in terms of channel width, depth and straightness. Other factors are velocities, ice, etc., but the first three must be determined in any case. In practice, this part of the problem is solved by attempting to meet one or more of the three following conditions:

- (1) To fit the channel for more advantageous navigation by craft already using it.

- (2) To fit it for navigation by existing craft of known dimensions, whose present sphere of operation on connecting waterways it is desired to extend by the creation of the new channel.

(3) To create a channel for vessels to be brought into existence for its navigation.

The third condition is by far the most complex, since both channel and craft must be designed for each other on the basis of the greatest efficiency and lowest cost of transportation. Having decided upon the type of craft to be accommodated, the problem then resolves itself into determining (1) what are the most suitable channel characteristics for such a craft and (2) how close an approach to these characteristics is justifiable on the basis of comparison between annual interest and annual benefit through the commerce which can be reasonably anticipated.

The adoption of successive projects for improving the Hudson River has been traced. Before the inception of the Erie Canal project, improvement of the Upper Hudson was designed for the better navigation by and to extend the field of operation of sloops then upon it. From the time of the opening of the Erie Canal until the commencement of the decline of its traffic, its commerce formed so great a part of the total commerce of the Hudson that the commercial engineering problem involved in Hudson River projects was, clearly, to provide the most suitable channel characteristics for the movement of the canal traffic. During this period the degree of approach to conditions fully adequate was limited by the amount of money appropriated from year to year for the prosecution of the very comprehensive projects in force. In the 90's, the case had altered. The channel needs of the large steamers plying the Hudson and of the ice and brick barges developed in local commerce exceeded the needs of the Erie Canal boats, though the influence of the Erie Canal was still of great weight, a deepening of it to 9 feet being at the time in progress or under very serious contemplation. Nevertheless, the volume of commerce requiring better facilities than those needed by the canal traffic was hardly sufficient to render economically justifiable an attempt to achieve perfect conditions for it. Consequently, the project of 1892 with its subsequent modifications provided for a channel fully adequate for the canal traffic then existing, but with characteristics which lessened, though they did not aim to remove entirely, the limitations on the free movement of the large steamers. The construction of the new barge canals of the State of New York again altered the situation by making reasonably sure the creation of a new canal traffic sufficiently large in volume to render any expenditure in the Hudson necessary to facilitate its movement, justifiable and economical, and once more, a project was adopted for the Hudson to obtain conditions entirely adequate for the movement of boats designed for a connecting waterway.

Up to the time of the adoption of this project, the rule has been followed that two feet in excess of the draft of the vessel at rest gives sufficient channel depth. The barge canals have a depth of 12 feet over the miter sills of the locks and it is generally understood that a draft of 10 feet is anticipated. Accordingly, the project of 1910, now being carried to completion, provides for a channel depth of 12 feet at lowest low water and a bottom width of 400 feet, increasing at the bends and at the principal ports.

While the present project will furnish a greatly improved outlet for the Barge Canals, the question has been raised as to whether or not the river should be made navigable to the dam by sea-going vessels, and recommendation for the adoption of a project with this end in view has been withheld awaiting the accumulation of evidence sufficient to create the belief that the volume of commerce which will actually be carried will be sufficient to render the expenditure a profitable investment of national funds. Nevertheless, certain investigations made in connection with the study of the necessity for a deeper channel and embodied in a report recently submitted to Congress, suggest that two feet may not be the proper difference between channel depth and draft of vessel at rest for the type of craft now navigating the Hudson; but this point will be treated of later.

So much for the commercial engineering problem involved in determining channel dimensions. We now come to the more technical problem of securing in the Hudson the channel dimensions determined upon. Its solution requires primarily an intimate knowledge of the regimen of the river. Some of the

salient characteristics are as follows: During low stages the Hudson is a tidal stream up to the dam at Troy, the tidal range varying from about 4 feet at Hudson to 3 feet at the dam. The river is subject to periodical freshets of varying duration and height, the ordinary freshets seldom exceeding 12 feet above the low water plane at Albany but sometimes reaching high levels of 20 feet and over. The floods arise from one or both of two causes, namely, first, excessive discharge due to rainfall or melting snow, reaching the river at Troy from the upper Hudson and the Mohawk separately or simultaneously; and, second, the formation of ice dams. The river bottom is composed of shale rock and sandstone, now bared in many places and elsewhere overlaid by gravel and sand which increases in fineness from north to south. During low stages, current velocities reverse with the ebb and flow of the tide and rarely exceed 2 feet per second. During the freshets the velocity is greatly increased and last spring reached a limit of 8 feet per second or about $5\frac{1}{2}$ miles per hour. In winter the river is frozen to a depth of from 12 inches to 3 feet, and the ice in breaking up often forms dams under which the water rushes with serious effects upon the bottom.

The great technical problem of the river's improvement is: Having secured a given depth by whatever means, how this depth can be maintained by preventing a movement of the sand and gravel of the bottom under the varying velocities and scouring power of the current at the varying stages which occur periodically. During all except highest stages little foreign material is brought into the river from above. But in high stages, when bank degradation in the head waters brings down silt, and during intermediate stages when the waters are cloudy, there is ample evidence of the disturbance in progress. The problem, therefore, is not only to prevent the deposit of foreign material brought down from above but to reduce; as far as possible, the scouring action in the portion of the river under improvement, which brings into suspension more material seeking a place of deposit in the sections of lower velocity. Epitomized, the object is to reduce scour and prevent deposits.

General Newton formulated definitely certain principles, first advocated by Major Delafield, which have been followed with success since his day, namely, to secure the desired depth by dredging and rock excavation and maintain it by the construction of longitudinal dikes, so located and of such a height as to produce velocities whose interrelation at different places in the river and at different stages will prevent shoaling. That his principles were correct is evidenced, for example, by the results of last spring's freshet when great quantities of material were carried in suspension, and deposits of magnitude, sufficient practically to close the navigable channel were formed in many places *behind* the dikes, while the bulk of the material which remained in the navigable channel was carried on in suspension to the deep water below Hudson or to the sea, leaving only a few minor shoals as evidence of its passage.

To secure the channel depth of 12 feet at lowest stage provided under the present project, a general deepening of from 0 to 3 feet is required in the thread of the channel, with considerably greater excavation at the edges and where the channel is to be straightened. In accordance with the principles outlined above, the greater depth is being secured below Troy by dredging and rock excavation, and the system of dikes, of heights sufficient to control the flow during low stages or low flood stages, is being amplified as experience and study have shown necessary to meet the new conditions. From Troy to Waterford, the river was canalized by the State of New York by the construction of the State Dam in 1823. Except in a few places, the existing depth in the pool of this dam exceeds 12 feet, but the present lock is entirely too small for Barge Canal traffic. Therefore, under the existing project, a new concrete dam and lock of ample dimensions are being constructed by the Government to replace the existing structure.

Compared to the Barge Canal and other great engineering works, the Hudson River project is not one of great magnitude. Nevertheless, a few comparative figures may help to give an idea of what is being done. The project requires the removal of about 400,000 cubic yards of ledge rock from the bottom of the river. To put it in terms more easy to visualize, this rock if piled up after breaking would be equivalent in volume to a building covering an area

equal to that of the building in which we now are (the State Education Building) and about two and one-half times as high. Ten million cubic yards of sand and gravel must be dredged and disposed of. If all this material were placed on that part of the city of Albany lying between State street and Island creek and east of South Pearl street, it would raise the level of that area about 50 feet, or it would raise the entire area of that part of the city which was submerged during the recent flood to a height of 30 feet above its present level. Fourteen miles of dike are being constructed or modified and the total amount of concrete paving which is being placed upon these dikes would build a concrete pavement 30 feet wide and 1 foot thick from Albany to Troy. The lock and dam at Troy presents an engineering job of about the same magnitude as that of the Visscher's Ferry lock and dam upon the Barge Canal, though since it has to pass the traffic from both the Erie and Champlain Canals, the lock is being built one and one-half times as long as the standard Barge Canal lock and will have three sets of gates instead of two. Without going into detail, the progress of the work can be surmised by comparing the cost to date, about \$1,800,000, with the estimated cost of the completed project, about \$5,100,000. Work was begun in 1910 but from unavoidable causes, rapid progress was impossible until early in the year 1912. In view of the progress since then, it is now hoped to have a completed 12-foot channel ready for navigation in the spring of 1916. One of the most interesting features of the work now in progress is the steel sheet pile cofferdam within which the lock at Troy is to be built, and which is now ready to be unwatered. It resembles in some respects the cofferdam which was built around the wreck of the Maine to allow its removal from Havana Harbor.

Embracing as it does examples of all the principal-known methods employed in river improvement, it is thought that the Hudson River project possesses much of intense technical interest to waterway engineers; for instance, the ice gorge problem, the details of dike construction to resist ice and wave action, and the never-completely-solved problem involved in their location and height. But engineering is a science of getting the desired results for the least ultimate cost and further delving into its infinite details as applied to the Hudson River is out of place.

While not directly incident to the work under existing projects, some special investigations have been made in connection with preliminary examinations recently ordered by Congress; and advantage was taken of the unprecedented flood of this year to secure some very interesting data not hitherto obtainable. Certain results of these investigations are deemed of such general and immediate applicability as to fall within the legitimate scope of this paper.

In connection with the further deepening of the Hudson proposed, a re-investigation was made of the adaptability of the existing project to the needs of existing commerce, and to the movement of vessels which can pass the Barge Canal. It is known that a vessel drawing 10 feet will float in 12 feet of water, but some uncertainty existed as to her behavior when moving in that depth. Accordingly, it was desired to find something more tangible regarding the relations existing between channel cross section, cross section of design of hull, speed and power consumption. Much is known by naval architects regarding the behavior of a hull of given design in deep water, and many experiments have been made on the resistance of models to motion in testing tanks of varying depth; but the effect of shoal water in actual practice seems to be but partially appreciated by boatmen and engineers in general. For purposes of safety it is obviously desirable that a minimum distance, say two feet, should be maintained always between a vessel's hull and the river bottom, while cost of operation is affected by every factor which influences power consumption by increasing or decreasing resistance to motion. Among boatmen, it is well known that a self-propelled vessel squats when under way and that for a vessel of any given power shoal water has a retarding effect, or conversely, that, within limits, for any given speed, economy in power consumption increases with the depth of water. While these phenomena are known qualitatively, little is of record quantitatively and, therefore, in studying channel design for the Hudson, it seemed highly desirable to obtain something more definite regarding these relations. Accordingly, in 1910, a series of instrumental observations were

taken on steamers plying the Hudson River and data obtained therefrom were studied with care in connection with such pertinent information as could be found in published documents on naval architecture and channel design. From the records of the field work, only two instances have been selected for presentation here as being typical and extremely interesting. The steamer "Hendrick Hudson" is capable of running at a speed of twenty-five miles per hour in deep water and draws about 10 feet when at rest. On one occasion this steamer moving in 14.4 feet of water at a speed of 9.14 miles per hour under a horsepower consumption of about 150, squatted one foot. On this occasion, her captain stated that he was making his best speed for this section of the river. On the next trip he was asked to open the throttle as wide as he dared, with the following results: depth of water, 13.9 feet; speed, 9.4 miles per hour; squat, 3.25 feet; horsepower consumption, 720. In other words, the net result of driving the boat with five times the power was to increase the speed .3 of a mile per hour and bring her down in the water until she barely missed the bottom. In fact, had the opening of the throttle been continued, she would have grounded. Certain general results of this study affecting directly the Hudson River and its navigation by self-propelled vessels drawing about 10 feet when at rest, and given in the official report, are:

1. That in 12 feet of water safe clearance cannot be maintained.
2. That in 13 feet of water safe clearance can be maintained with a speed less than 8 miles per hour.
3. That in 14 feet safe clearance can be maintained with a speed of $10\frac{1}{2}$ miles per hour, but that at this speed the power consumption will be uneconomical and the swells damaging.
4. That in 16 feet a speed of 12 miles per hour can be maintained safely and economically.
5. That speeds greater than 14 miles per hour are uneconomical or unattainable except in very deep water.

Exhaustion of the funds provided prevented the extension of this investigation to practical tests on vessels under tow, but the investigation was carried far enough to show that a very marked increase in resistance to motion is inherent in the navigation of channels even moderately restricted. The general laws which apply can be understood by considering an extreme case such as the artificial channel of the Barge Canal, in its rock sections 94 feet wide and 12 feet deep with almost vertical sides. As a boat drawing 10 feet, having a beam of 40 feet, is towed through the water in such a channel, the space which she has occupied must continually be refilled by water which under the laws of fluid motion comes from all directions, and the water occupying the space into which the boat moves must be displaced again in all directions. Thus a considerable movement of water in various directions is necessary. In a case such as this, water can be placed in motion only as the result of the creation of differences of surface elevation known as head, and the rapidity of the motion varies as the amount of head or difference in surface elevation is created. In open channels the movement of the water is not restricted and takes place through larger areas and, hence, at lower velocity, requiring lower head. In a restricted channel, blocked off in large part by the hull, the area available for the motion of the water from in front of to behind the boat and in the direction of motion, is greatly reduced and, consequently, the velocities of the moving water must be greater and require increased heads for their creation, while the friction between the water and the banks must be overcome and this again increases the heads required. Thus the energy required to build up these heads appears in increased tow line pull, already augmented by the greater skin friction induced along the sides of the boat by the rapid flow from bow to stern. The subject is extremely interesting and important and it is hoped next year to equip some barges with recording pressure gauges to which the tow lines will be attached in the hope that definite quantitative answers to a few of the questions raised may be obtained in actual practice.

The subject of flood control is now in the forefront of public thought in the Middle West and also in the Hudson Valley, and the reservoir project now the subject of an amendment to the Constitution of the State of New York, while primarily for power development, has as a secondary object flood control in the valleys of the Hudson and Mohawk. The handling of flood water is a subject which vitally concerns improvements for navigation and hence is now and has always been given consideration by the Government. To determine whether or not the Federal work should be extended to flood control in the interest of riparian owners as well as of navigation, some data connected with last spring's flood seem pertinent here.

During the flood, accurate observations of heights were made hourly at Albany and Troy and rough field observations were taken for heights, velocities, carriage of sediment, trend of currents and other observable phenomena at as many points as possible along the Hudson River between Troy and the city of Hudson. Data based on these observations are not precise but are sufficiently reliable and conservative for certain practical uses. The water began to rise on March 20, 1913, and a medium height freshet prevailed until March 26th, when the 10-foot stage at Albany was reached. The water then began to rise rapidly, culminating with a height of 21½ above mean sea level at about 10 a. m. on March 28th, and reaching the 10-foot level again on April 1st. The total discharge between March 26th and April 1st at the freight bridge at Albany is estimated approximately as 84,000,000,000 cubic feet, while between those dates, the quantity of water which passed in excess of what would have been carried by a freshet not exceeding 10 feet in height was about 39,000,000,000 cubic feet. Certain observed surface velocities and certain mean velocities computed from observed slopes are shown by the following table:

PLACE.	Velocities on March 28 corresponding to 21.5 m. s. l.* Albany.		Velocities on April 1 corresponding to 10.0 m. s. l. Albany.	
	Estimated (Surface).	Calculated. (Mean).	Estimated.	Calculated.
15th St., Watervliet.....	None	9.05	4.00	4.65
Livingston Ave. Bridge.....	7.00	6.79	4.00	3.63
Van Wies Point.....	None	6.47	3.60	3.58
Castleton.....	7.5	4.92	None	3.84
North and Base Island Dike.....	9.7	4.0

* M. s. l.— Mean Sea Level at Sandy Hook, N. J.

The words 84,000,000,000 cubic feet convey the idea of a large amount of water but do not bring to the imagination anything very definite or tangible. The quantity of water which passed will be appreciated better by noting that 84,000,000,000 feet of water would fill a barrel having an area at the base of 1,900 acres, or a diameter of something over two miles and a height about equal to that of the Eiffel Tower; or that it would fill a canal having a cross sectional area about equal to that of the earth section of the new Barge Canal and 13,000 miles long, something about four times the distance from New York to San Francisco, or that a reservoir 50 feet deep to contain this quantity of water would have to have a superficial area of 38,000 acres or 60 square miles.

Flood damage to riparian property is primarily a function of flood height. In a valley like that of the Hudson, the low lands, particularly where improved, rise on a very gentle slope from the banks of the normal channel to the foot of the hills at the edges of the flood basin. When water has once encroached upon these slopes, a relatively small increase in height extends very rapidly the area of destruction; for example, during the recent flood at Albany, some thirty city blocks which were dry when the water stood at elevation 20 were

inundated at elevation $21\frac{1}{2}$, with the usual flooding of cellars and attendant discomfort and danger to health, while in the farm lands of the alluvial basin below Albany, there are many places where whole fields were inundated through a rise of less than half a foot. Thus, height is in a certain sense of more immediate importance than discharge. In general, flood height is a direct function of the discharge and an inverse function of the cross sectional area available for run-off.

Much has been said and is planned to reduce the discharge through the use of storage reservoirs; but at best many years must elapse before those now planned can bring practical, beneficial results, and with any reservoir system, there is always a chance that a failure of judgment on the part of some one responsible for its control may result in the reservoir being full when a heavy rainfall occurs. On the other hand, the effect of encroachments upon the river in increasing flood heights is definite and direct, as illustrated effectively during our late flood. Observations were taken of the height of the water between Hudson and Troy and from these observations, simultaneous readings were plotted to show the slope of the water surface at different stages. The resulting curves are interesting and significant. Until the stage of about 14 feet at Albany was reached, the river slope from Castleton to the Troy dam was fairly uniform. At these stages, the cross sectional area in the harbor at Albany, differed but little from that between Albany and Troy. When the water had reached elevation 21 in the southern part of Albany, it stood 2.2 feet higher near the freight bridge, and the slope between these points was nearly twice as great as that between the more northerly of the two and the southern limits of the city of Troy. The difference was caused by the contraction of the river when at this height, by the cities of Albany and Rensselaer, and particularly by the freight bridge of the New York Central Railroad. Could the water have passed by the city of Albany through a channel of equal area to that opposite the Albany water works, it is apparent that the flood height at Troy would have been 2 feet or more lower than that which prevailed, and an investigation of the contours in Troy and Watervliet will show what a material reduction this would have made in the inundated area.

Whatever difficulties may be in the way of increasing the run-off of the river at Albany, it is interesting to conjecture the effect upon Albany itself which a southerly extension of the city along its banks would have by increasing further the damage from future floods. A deep channel has been proposed to remedy this situation, and provided a sufficient mean velocity could be insured in such a channel, complete relief would depend only upon securing sufficient depth. Without going into the details of the hydraulic problem presented, it is sufficient to state that its application is not as simple as it appears. One example only of the complications affecting the case will be given. The State dam at Troy, with a crest elevation of 14 feet above average elevation of the lower pool, would be expected to cause a marked slope in the high water curve due to the small cross section available for run-off. As a matter of fact, the difference in elevation between Bond street and Fulton street, Troy, above and below the dam, was less than 0.4 foot and the influence of the dam was almost negligible. Thus, by reason of riparian obstructions lower down, the relatively great depth below the dam had no influence in accelerating the velocities at that point. Further than this, a deepening in any locality, particularly where the banks are obstructed and all close together, becomes extremely expensive as soon as rock is struck and the amount of deepening possible is limited finally by the side slopes which can be maintained. In the Hudson only a partial relief can be had in this way; for instance, with the water at elevation 20, a channel in the harbor of Albany with a depth of 30 feet at lowest stage, would have a cross sectional area available for run-off only about one-third that at present obtaining in the shoal sections where the depth is only 12 feet at low stages but when there is free opportunity for run-off over and behind the dikes.

This brings to mind a question which shortly after the flood was much talked of. An impression prevailed at that time in certain quarters, that the extreme flood heights were increased by the longitudinal dikes constructed for the improvement of navigation. Between Albany and Troy, where the dikes

are highest, they are designed to be topped by the water when an elevation of 10 feet is reached on the Albany gauge and up to that stage, at which practically all the wharves are well out of water, the bulk of the flow is carried between them. But during the higher stages of the flood, it is shown clearly by the slope curves that the dikes have absolutely no effect in increasing the extreme heights, the flood run-off area in the sections of the river where they are built being much greater, and the flood slopes flatter than at the points of artificial or natural minimum section which determine the extreme heights.

As bearing on the future and the policy of the Government in relation to it two important recommendations to Congress regarding the waterways of Eastern New York have been made public recently. One is a report on a preliminary examination of the Hudson River with a view to securing increased depth, published in House Document 1160, 62nd Congress, 3rd Session; the other is a report on a preliminary examination and Survey of the Narrows of Lake Champlain, published in House Document 1387, 62nd Congress, 3rd Session. The former refers to what is commonly known in this vicinity as the deeper Hudson project, taking into consideration, among other things, the proposition to create a ship channel to the Capital District. The latter contains a recommendation for the adoption by Congress of a project for improving the present waterway system from New York City to the Canadian border, by the creation of a channel of suitable dimensions through the marshes of the Narrows of Lake Champlain, connecting the northern end of the Champlain Canal at Whitehall with the southern limit of natural deep water in the lake near Ticonderoga.

Regarding the Hudson River, the insertion of certain extracts from House Document 1160 seems proper to the completion of this paper:

“ . . . By their relation to the general movement of commerce, the waterways of the United States may be considered as forming three distinct systems of through, connected thoroughfares—the Atlantic System, the Mississippi System, and the Pacific System. The Atlantic System comprises the Atlantic Ocean, the Great Lakes, the waterways connecting them with each other and the ocean, the Gulf of Mexico, the harbors along the coast, the intracoastal canals, and the streams reaching inland from the seaboard. The Mississippi System comprises the great rivers draining the central valley of the United States with an outlet on the Gulf of Mexico. The Pacific System comprises the Pacific Ocean and the rivers and harbors of the Pacific Slope. The Mississippi and Ohio rivers are connected by canals with the Great Lakes, and the three systems will soon be joined by the Panama Canal, the whole constituting the continuous waterways of the United States. The navigable portion of the Hudson River reaches inland from New York City to the center of an important commercial community and to a confluence of existing routes of transportation, both rail and water, from New England, Canada, and the Great Lakes. Hence, by virtue of its location this river forms a most important connecting link in the Great Atlantic system.

“ Defined . . . While the Hudson River is an independent highway for a considerable local commerce, it is preeminently valuable as an indispensable connecting link in what may prove to be the most important of the through-water routes comprising the Atlantic Waterways System. It has been shown also that projects are now under way which will greatly increase the capacity of this system, connect it with the Pacific System and reduce the cost of transportation upon it; and that other projects still under consideration seem destined in the near future to extend the inland mileage of the system, enlarge its sphere of usefulness and further increase its facilities for economical transportation. The problem in hand is to determine what increase in the depth of the Hudson River is demanded by the situation.

“ . . . It has been shown that the Capital District has all the qualifications for a good transfer point, except ready access to the sea, that it has great natural advantages for the development of manufacturing business, and that radical improvement in its transportation facilities is now nearing completion. The question to be decided is the necessity for incorporating in this improvement an expensive project for opening the river to seagoing navigation. It has been further shown that although the Newburgh District, lying at less than

half the distance from the sea than the Capital District, possesses a possibility at small expense of making a transfer point between seagoing and inland commerce, no attempt has been made to take advantage of this, probably for the reason that the economic necessity for such a transfer point does not exist. Conceding that the opening of a deep channel in the Upper Hudson would assist in developing manufacturing business and would to some extent relieve present congestion in New York Harbor, but considering that new transfer facilities are shortly to be created in New York, that the opening of the Barge Canals will so alter transportation conditions as to furnish a reliable indication as to whether or not business intends to profit by the manufacturing facilities offered, and that successful inland navigation by seagoing vessels is at best uncertain and always attended by great difficulties, it is thought that present necessity for the creation of a ship channel in the Upper Hudson at a cost in excess of \$10,000,000 has not been fully proved.

"As a result of the investigation which has been made, the chief points of which are embodied in the above discussion, the conclusions have been reached: (1) That the immediate benefits to be derived do not justify the cost of constructing at this time a channel of sufficient depth to accommodate seagoing vessels; (2) that such a channel may become an economical necessity in the future; (3) that the river forms an integral part of a great waterway system of such importance that any improvement at reasonable cost necessary to facilitate the handling of its commerce is worthy of careful consideration; (4) that the needs of this commerce are not fully met by the channel depth of the approved project, viz., 12 feet at the lowest stages; (5) that an increase of the proposed channel depth to 14 feet at the lowest stages would be very advantageous, but that the saving which would result from such an increase at the present time would not justify the expense.

"Therefore, a further improvement of the Hudson River with a view to obtaining increased depth over that called for under the approved project should be postponed until the effects of the opening of the New York State Barge Canals on the character and volume of the commerce of the Hudson and on the types of vessels used in the trade shall have become manifest, and the economic necessity for an increased depth shall have been proved."

To conclude, it has been attempted to show that in Northeastern New York, the Federal Government has been carrying on improvements commensurate with the needs of the great waterway system conceived and executed by the State of New York and so has contributed to a resulting system whose unity is fairly complete, but that as yet a project involving a departure to suit standards of traffic higher than that seen fit by the State to provide for has not, after most careful study, seemed economically advisable for immediate execution. May the improvement of waterways in Northeastern New York always keep pace with the economic demand for increased transportation facilities to reduce the cost of living and promote the advance of civilization, but here, as elsewhere, may exploitation to gratify individual cupidity never be mistaken for civic development.

PRESIDENT HILL: I know we have been very much enlightened by the paper of Captain Black and I hope the United States government authorities will permit us to incorporate it in the final minutes of the Convention. The Convention will now stand adjourned to 9:30 to-morrow morning.

SECOND DAY.**Friday, October 31.****Forenoon Session.**

President Hill called the delegates to order at 9:30 A. M.

PRESIDENT HILL: On the program of yesterday there were some transpositions made and in place of the paper by the Hon. Frank S. Gardner of New York that of Mr. Ellsworth, our Secretary, was read, and this morning we are to have the pleasure of hearing from Judge Charles F. MacLean of the city of New York, who will read a paper forwarded to this Association by Mr. Gardner. It is a pleasure to have gentlemen of such experience as Judge MacLean possesses appearing so actively in the affairs of this Association. Judges can pass on many questions that are presented to us with much more ease and facility than some of the rest of us, and this Association from its inception has had not only judicial talent and legislative talent but has had business talent, giving the members the benefit of their several experiences. This has made it a vital organization, and so may it ever continue. I take pleasure in introducing to you Judge MacLean of New York City. (Applause.)

JUDGE MacLEAN: Appreciating with gratitude the introduction which you have so flatteringly given me, Mr. Chairman, it gives me very great pleasure to bring a real contribution to these exercises by reading a paper prepared by a gentleman of experience and more ability than myself, the paper of Mr. Frank S. Gardner, secretary of the New York Board of Trade and Transportation. It relates to the three bills now before Congress respecting the improvement of the Mississippi Valley.

Mr. Gardner said, later, that as his paper had no direct relation to either the navigation or water power situation in the State of New York, he would prefer to have it not included in this report.

PRESIDENT HILL: Mr. Gardner always has good suggestions on waterway matters, whether they be state or national, and I take this opportunity of saying that few, if any, men in this State have contributed more largely to substantial progress in waterway legislation in an advisory capacity and in a constructive manner, than the Hon. Frank S. Gardner of New York City, who is unavoidably detained from the sessions of this Convention. I think when the history of this State is written, if it be truly written, it will be conceded that the constructive talent of the Hon. Frank S. Gardner has been shown in not only State legislation but such Federal laws as the Interstate Commerce Act which is now regulating the commerce of the nation. And I, therefore, know that we will give great weight to any suggestions that he has made in his paper.

The oldest commercial organization in this country, if not in the world, is the Chamber of Commerce of the State of New York, whose charter was granted by George III. We are fortunate to-day in having on our program a paper to be presented by the secretary of that noted organization. It will not only be gratifying to the members of this Association to hear Mr. Pratt but it is a personal pleasure to present him as the next speaker, long a personal friend and the recognized authority in New York on matters on which he will speak. I take pleasure in presenting Mr. Sereno S. Pratt of New York. (Applause.)

THE STATE AND CITY OF NEW YORK.

MR. PRATT: I dislike very much to unload myself upon Senator Hill, as I know that he bears many burdens, but I am here to-day because he asked me to come and I am very sure that there is no man in the State of New York who knows Senator Hill who would not respond promptly and enthusiastically

to any call that he might make upon him to perform any service which he might indicate. He not only asked me to come but suggested the general idea of the paper which I am to read to you. I am to talk on the general topic of "The State and City of New York."

At this time when some of our fellow citizens in other parts of the United States are pleased to speak of the Empire State of New York as "Darkest America," it may be well for us, like Livingston and Stanley, to make a trip of exploration and discovery, to find out something about this "Darkest America." We learn at the outset that among all the states, she is first in population, first in commerce, first in manufactures, first in banking and first in transportation by rail and water.

Moreover, she has held this pre-eminence for many years. She took the lead in population in 1810. She became first in industry in 1820. She has been easily first in banking since 1837. She has always been a leader in promoting transportation facilities. Her commerce has exceeded that of all competitors for more than a century.

This supremacy is due chiefly to water. With one of the three or four most spacious harbors in the world—and the one which can be most inexpensively maintained and developed for the expanding needs of modern shipping, with lakes and rivers supplying unequalled sources of transportation and power, with a canal system which, built, preserved and enlarged entirely at the expense of the State, without outside aid, has linked the Mississippi Valley with the Atlantic Ocean, it was inevitable that a vast population should gather around the waterways of New York, that commerce and industry should thrive, that over 8,000 miles of railway should be built within our boundaries, and that every important eastern trunk line should expend millions in building terminals in and around our great harbor. When, several years ago, I asked President Cassatt why it was that the Pennsylvania Railroad was spending \$125,000,000 in order to get into New York he replied by asking me what I thought the Pennsylvania system would amount to without a terminal there.

In like manner, I might ask you what the State of New York would amount to with her big harbors closed and the Hudson dried up. She might be a Vermont or a New Hampshire, but she would not be the Empire State.

But there are in the United States other harbors besides that of New York, other lakes besides Erie, other rivers besides the Hudson, other canals besides the Erie and the Champlain. We have been greatly blessed in our geographical position but we have no monopoly. Never before in the history of this country has there ever been so keen a competition between ports, between states and between cities as there is at this time for commerce and manufacturing. This state and urban competition is being scientifically organized, governmental forces uniting with commercial associations to promote the business of different sections and cities.

It is unnecessary to go into the details of the booming and advertising with which much of this competition is accompanied. Suffice to say that each locality is putting forth every effort to secure its full share—and a little more—of the trade of the country. As the biggest state and the biggest city of them all, the State and City of New York must necessarily meet this competition at every point of the compass.

It has been recently computed that an expenditure of \$1,000,000,000 is involved in projected port improvements throughout the world. Boston, Philadelphia, New Orleans, Montreal, San Francisco, Seattle, Los Angeles and other cities are making extensive and expensive plans for new terminal facilities so as to adapt their harbors to the expanding units of international and domestic commerce, which it is expected is to be vastly increased by the opening of the Panama Canal. New York City should spend \$60,000,000 in harbor and dock improvements, and would have been able at once to plan on that scale of development if she had not taxed her resources to the utmost to build subways.

Now, in this competition of section with section and city with city, it is important for us to consider how the State and the City of New York stand.

We cannot escape from the problems which this competition thrusts upon us. We may deplore certain features of it, and we may be anxious lest the

spirit of sectionalism which it involves may work harm. But we must recognize that on the whole this competition, by inspiring new civic enterprise in the different parts of the country, will, in the final results, promote the prosperity of all the country.

We in New York have held our own very well during the past ten years or so.

Taking the figures of the 1910 census and comparing them with those of 1900, we find that in population the State of New York has expanded over 25 per cent. in ten years against over 21 per cent. in the preceding decade. She has grown even faster than the country as a whole, and now holds one-tenth of all the people living in the United States.

In manufacturing the record shows that while in 1849 our share of the total industry of the United States was 23.3 per cent., in 1910 it was 16.3 per cent. In the five years from 1904 to 1909 our number of manufacturing establishments increased 20.8 per cent., against 24.2 per cent. in the country as a whole, the capital invested 36.8 per cent., against 45.4, and the value of products 35.4 per cent., against 39.7. While this shows that our increase is not as large as the rest of the country, the exhibit is after all gratifying because, in spite of the tremendous competition to which we are subject and the enormous economic changes which are constantly going on, we have made important gains.

In foreign commerce the port of New York, in the fiscal year 1912, enjoyed 46.99 per cent. of the country's total, against 46.12 per cent. in 1911. The ten year average, however, was 47.85 per cent. In the ten years from 1902 to 1912 our share of the nation's merchandise imports declined from 61.9 per cent. to 59.0 per cent. and of merchandise exports its share increased from 35.5 to 37.4 per cent. So we are holding our own very well in foreign commerce.

Look at the statistics of bank clearings, which are probably the best test we possess of the volume of total business transactions. In 1912 New York State's share of the total bank clearings of the United States was nearly 59 per cent., a splendid showing. But while in the ten years from 1902 to 1912, the bank clearings in the City of New York increased over 29 per cent., the gain in the rest of the country was over 74 per cent. This showing is, however, complicated by the effect upon the figures of the speculative depression of the past decade which is chiefly felt in the financial center.

As citizens of the State of New York it seems to me that we should consider carefully the significance of these figures.

Now, of course, we don't want in the State of New York, a monopoly of the commerce and trade of the United States; nor do we want the City of New York to become a great anaconda of a city, throwing its power around and squeezing the life out of the rest of the country. We believe in the motto, "Live and let live." We do not adopt that kind of competition that uses one's own strength to destroy others.

New York is in fact the most national state in the country. because the interests of its people through their investments and their trade cover the whole continent. The spirit of our merchants, as I see it, is broadly national, not sectional. That spirit is certainly displayed in the records of the New York Chamber of Commerce, and I have no doubt in those of the other leading commercial organizations in this state. I made a hurried inspection of the minutes of the New York Chamber during the past sixty years, and I find that it acted many, many times, not only for the relief of other parts of the country in times of stress and disaster, but also for the promotion of their material interests. Several times it has exerted its influence for the improvement of the Mississippi River. It was one of the first to urge the building of the trans-continental railroads to the Pacific. As early as 1827 it adopted a memorial in favor of an inter-oceanic canal, and in 1886 it sent John Bigelow to Panama to make an examination and report upon the canal project. From 1786, when it made the first proposal for the Erie Canal project, until the present day, it has supported that great waterway development, which is certainly as much in the interest of the rest of the country as of our own. It has at various times acted in behalf of the welfare of Chicago, St. Louis, San Francisco, Seattle, Portland, Omaha, Savannah, Richmond, Memphis, Charleston and other

cities outside of our own state, and several years ago it even sent a delegation to Texas in the interest of the development of that state. That is pretty good to come from "Darkest America."

On the whole, I think it is fair to say that the people of New York, realizing that the prosperity of every part makes for the prosperity of the whole, and that the prosperity of the whole makes for that of every part, are striving to live up to their full responsibility as citizens of the Empire State, not attempting to crush or injure her competitors, but, if possible, to lead them.

But, while holding this spirit of good will toward our competitors, it must not be expected that we are going to stand still and permit our God-given advantages of commerce to be snatched away by them. Our problem is not to make war upon our neighbors but to defend and maintain and promote the supreme interests committed to our hands.

Thus far we have maintained our leadership for a hundred years. That superiority is not yet threatened. But the point I am endeavoring to impress upon your minds is that of the folly and danger of supposing that our position is impregnable and that we need pay no attention to the strenuous endeavors of our sister states and sister cities. Even Gibraltar could be taken. Every business man knows that the moment he stops striving for more trade, that moment marks the beginning of his decline. What is true of individuals is also true of states and cities. We must go ahead or fall behind. There is no safety in standing still.

If New York is to move forward, if she is to maintain her splendid position of commercial, financial, and industrial leadership in this country, keeping pace in every decade with the material progress of the whole country, then it is imperative that every interest in the state should move in unison to that end. We should strive to eliminate every vestige of offensive sectionalism within the state.

Let me illustrate.

There is a class of men in New York, as elsewhere, who with narrowness of vision, or selfishness of interests, oppose waterway improvement however well-considered or planned, because they imagine that improved waterways are a menace to the welfare of the railroads, whereas, rightly considered, they contribute greatly to the welfare of the railroads. On the other hand there are men who advocate waterways improvements apparently for the sole purpose of injuring the railroads, forgetful of the fact that there can be no true prosperity in this state, or in this country, if the railroads are not prosperous. And at this time especially, when the railroads need and, in the main, deserve the support of every business man in solving the very difficult problems confronting them, the pressing of waterway improvement for the sole purpose of clubbing the railroads, is wholly unworthy. In the State of New York at least we should support both railroad and waterway development, and hold both to a rigid but intelligent and sympathetic oversight.

Another illustration of the danger of division and antagonism at a time when the whole state should be united for the promotion of her commerce and industry:

There has been in the past, and is now, a good deal of unfortunate antagonism between the City of New York and the rest of the state, or if antagonism be too strong a word, let us say, indifference to each other's interests.

Well, in view of all the conditions which confront us in New York, it is a case of the city and the country hanging together or hanging separately. If the City of New York cannot have the ready co-operation of the rest of the state in its efforts for the extension of its commerce and the improvement of civic conditions, and if the up-state districts cannot have the support of the city in the working out of their problems, then we can't hope to present a solid front against our competitors in other states at a time when there is much unfortunate sectionalism aroused against us.

In the place where I spend my summer vacation we are seven miles from the railroad. Those seven miles of road are the most important interest of the village, for they are the connecting link with the outer world, without which it could not send its produce to the markets or receive intelligence from outside.

Now, in the harbor of New York there has just been completed a road to the sea which is as essential to our welfare as that road to the station is to the little village I have mentioned.

This road to the sea is the Ambrose Channel. This magnificent road connecting the docks of the city with the deep water of the Atlantic Ocean, is 40 feet deep at mean low water and 1,000 feet wide. It is as much a thoroughfare as any built upon land. Its limits are well defined, and there are traffic rules to govern the ships that may pass through it. This is the broad avenue to the sea in which every great steamer must travel. And it is just as important to the farmer in Sullivan or Ulster counties that there should be this Ambrose Channel as it is to any inhabitant of the city. If that channel were closed and the steamers of big construction were thereby prevented from entering New York harbor, there is not a citizen of the whole state who would not suffer loss. The blow to the commerce and the trade of the state would be incalculable. The loss would be a national calamity. The development of the port and terminal facilities of the City of New York is as much the interest of the interior of the state as it is of Manhattan Island.

The reverse is just as true. The interests of Buffalo and Rochester and Albany are, or should be, the interests of New York City. The practical waterway development up the state is as much to be considered as the projected improvement of the East River or the proposed deepening of the Buttermilk channel. The Barge Canal, the better navigation of the Hudson River, the problem of 1,000-foot piers in the North River are all the equal concern of every citizen wherever he lives.

If New York City asks the rest of the state to consider the claims of her commerce, so the rest of the state has the right to ask the people of New York City to consider the claims of her agriculture.

And right here let me suggest that perhaps not enough has been said of the benefit of waterway improvement to agriculture. Certainly there is no field of effort that seems more promising to-day than that of the revival of farming in New York State.

During the past ten years the number of food consumers in this country has been growing more rapidly than the number of food producers. In the ten years from 1900 to 1910 the population of the cities of the United States increased 11,013,738, while that of the rural districts increased only 4,963,593. The urban increase was 34.8 per cent. and the rural 11.2 per cent.

The farms of New York State are close to the biggest market in the country; and yet what does the last census show? That the number of farms in New York decreased over 11,000, a loss of 4.9 per cent. comparing with 10.9 per cent. increase in the United States. There was a decrease of 4.8 per cent. in improved farm land acreage against a gain of 15.4 per cent. in the United States. The value of crops increased 29.5 per cent. but this was a lower rate of gain than in any other state in the union except Pennsylvania, Massachusetts, Connecticut and Rhode Island.

Now, with the great nearby market to supply and with increasing transportation facilities, why may not New York regain a part of her former agricultural prominence? Here is a field of effort which it seems to me our commercial organizations in the cities and our waterways and other associations in the state may well unite with the farmers' associations in the country. Already some of them are doing this and in this connection it is fitting to acknowledge with appreciation the work in this direction which is being done by the New York Central and Long Island and other railroads.

Now, all that I have been saying is very simple and obvious. I have said nothing that is not known to you all. But it is the obvious things that need to be said over and over again, lest we forget. And if I have said anything which, in any way, serves to promote homogeneity among the different sections and the different interests in our great commonwealth, thus tending to produce solidarity of thought and purpose, I shall not have spoken altogether in vein.

SENATOR COBB (presiding): We will now listen to the report of the Committee on Legislation. Hon. William J. Roche, who will give this report, has been one of the staunch friends of waterways for many years, and one of its most forceful advocates. I take pleasure in introducing Mr. Roche of Troy. Applause.

REPORT OF COMMITTEE ON LEGISLATION.

MR. ROCHE read:

TROY, N. Y., October 30, 1913.

To the Fourth Annual Convention of the State Waterways Association:

GENTLEMEN.—At the Convention of your Association held at Watertown in 1912, the following resolutions were adopted:

“Resolved, That five persons be named by the Chairman who, in addition to the Chairman, shall constitute a Committee on Legislation, which Committee shall have power to prepare and cause to be presented to the Legislature suitable amendments to the Transportation Corporations Law and the Public Service Commissions Law of this State, intended to safeguard and develop commerce upon the public waters of the State, and which, among other things, shall confer upon the Public Service Commissions powers and authority as to intrastate commerce like unto those which have been conferred by Congress upon the Interstate Commerce Commission with reference to interstate commerce; and said Committee is requested to appear before committees of the Legislature and advocate the passage of such amendments; and

“Be it further Resolved, That this State Waterways Convention declares it to be sound public policy that railroad corporations shall not, either directly or indirectly, be permitted to purchase or hold the stocks of navigation companies, or to operate barges or vessels upon the canals or other public waters of the State, and the Convention is in favor of making the existing statute on the subject of such stock ownership more effective than it is.”

Pursuant to these resolutions your President named a committee of five, consisting of George Clinton of Buffalo, Lewis Nixon and Frank S. Gardner of New York, John D. Kernan of Utica, and myself, who together with the President, Henry W. Hill of Buffalo, constituted the Committee on Legislation. I was named by him as chairman. Your Committee met from time to time and, in consultation with others interested in the development and improvement of the waterways of the State, they framed two bills intended to carry out the letter and spirit of the Watertown resolutions. Both of these bills, one number 1268 and the other number 1269, were introduced in the Senate by Senator Malone on March 4, 1913, and similar bills, one number 1728 and the other number 1729, were introduced in the Assembly by Mr. Levy on March 6th. They were referred to the Judiciary Committee in each House. Senate bill number 1268 was reported from the Judiciary Committee with a slight amendment and was then recommitted to the Committee. Copies of these bills as introduced in the Senate are hereto attached and are made a part of this report. No hearing upon these bills was given in the Senate and I found it difficult to secure one. A hearing upon the Assembly bills was given and the bills were opposed by attorneys for two of the large railroad systems in this State.

I cannot better set forth the purpose and effect of these bills than by presenting the bills themselves and also the following extract from a letter which I sent to the chairman of the Assembly Judiciary Committee after this hearing, in the following terms:

“The purpose of the bills is two-fold: First, to assure the regulative and competitive function of the waterways of the state and particularly of the enlarged canals. (Any one who will read the recent report of the United States Commissioner of Corporations on Transportation by Water as to the extent and effect of railroad acquisition of navigation companies, the operations of railroad-controlled vessels and railroad dominance over water lines, will appreciate the great importance of the proposed legislation and of confining the railroad activities to railways. The people did not vote to expend \$127,800,000 for the canals and state terminals as an investment in railroads or for the

benefit of railroad corporations; and yet, that is what will become of the money unless the overshadowing hand of the railroad is kept off the waterway.) Second, to bring the state laws as to intrastate commerce in harmony with the national laws as to intrastate commerce, as the latter are expressed in the Act to Regulate Commerce (commonly known as the Interstate Commerce Act) and the recent Panama Canal Act. Your Committee will appreciate the desirability of harmony instead of conflict between these statutes, which relate to subjects and operations of a cognate character.

"Our State, by its Transportation Corporations Law, has, for many years, prohibited railroad corporations from having, owning or holding any stock in a navigation corporation. The law is ineffective, and is derided either openly or covertly. It is proposed to make it effective by bill number 1729, which is taken almost word for word from the Panama Canal Act; but which, nevertheless, permits the railroad to operate boats for ferry connections and terminal operations within the lighterage limits of the City of New York or within other harbors. It is a prohibition against the railroad either directly or indirectly acquiring or holding stocks or bonds either of a navigation company formed under the laws of the State or issued by any foreign corporation which is authorized to do a transportation business in this state. Certainly our state has a right to put restrictions upon corporations formed under its law and to say to the railroad corporation that it shall engage only in business upon the land as it may say to the banking corporation that it shall not engage in any other business than banking.

"Neither of the bills relates or purports to relate to anything but our state corporations and to commerce originating and terminating within the state. (See subdivision 9, section 2 of the Public Service Commissions Law, which is the subject of bill 1728.) The Legislature cannot legislate as to interstate commerce; and, therefore, the cases cited by these attorneys are not at all pertinent. These bills do not exact any license fee or impose any tax upon interstate commerce or upon corporations engaged therein, which was what was involved in some of the cases cited. But the right of the state to control the internal business of the state although thereby foreign or interstate commerce, may be indirectly affected, was recognized in *Allen vs. Pullman Palace Car Co.*, 191 U. S. 171, 180 and 181, and in *Osborne vs. Florida*, 164 U. S. 650.

"Bill number 1728 brings navigation companies and water lines under the jurisdiction of the Public Service Commission, which they are not under existing law, as was decided in *Murray's Line vs. Delaware & Hudson Co.* This is necessary, if we are to secure co-ordination between rail and water lines. All the italicized matters in these bills follows closely the federal law as well as the recommendations contained in the report of the Commission on Barge Canal Operations, transmitted to the Legislature January 20, 1913 (see pages 28 and 29). The sentence on page 4, lines 1-6, is taken word for word from the recommendation of the National Waterways Commission, which was composed of six United States Senators and six members of the House, who were unanimous in their report. And the reason given by the Commission was this:

" 'Local rates are generally higher than through rates and where reductions are not granted the high local rate charged by a railroad on transferring traffic so largely offsets the lower water rate that there is no advantage in shipping by the combination rail and water route.' "

"The next sentence is taken verbatim from section 4 of the Federal Act as amended; and the provisions as to physical connections are similar to the Panama Canal Act and were recommended by our State Commission and are intended to secure what was aimed at in section 13, chapter 746 of the Laws of 1911, which is the act establishing the state terminals.

"The provision as to through bills of lading were recommended by both National and State Commissions and is intended to compel the railroad to treat shipments partly by water and partly by rail the same as it is now required to treat shipments all-rail (see section 20 of the Federal Act; also page 20 of the National Waterway Commerce Report).

“I understand that the attorneys have no objections to the bills if confined to the canals. But I say there is no reason why a distinction should be made between the canals and other waterways. In this matter the state should not have one policy for one class of public waters and another for another class. The Hudson River is the Erie Canal elongated and *vice versa* and the same is true of the Champlain Canal and Lake Champlain. As to their objection that it would interfere with railroad-owned lines on some interior lakes or lake, that is true; and if they have either openly or evasively established railroad boat lines, they have done so contrary to the letter and spirit of the existing law, and it shows the necessity of strengthening the law. We are not seeking to establish a new policy, but to make effective an old one. It is not intended merely to exclude the railroad from waterways with which it may or does compete, but to prevent it from entering the waterway field altogether. Let it do the business and only the business for which it was organized. If there is business for boat lines on these lakes or any other waters, the demand will be met either by individuals or by regularly established navigation companies, as it was before railroad competition and practices destroyed competition.”

Mr. Clinton filed a brief upon similar lines.

As the session wore on more and more embroilment ensued between the executive and the Legislature and all probability of action upon these measures vanished. I was assured by the Speaker of the Assembly that the bills would be favorably reported from the Judiciary Committee; but I have never learned that they were so reported. I have no doubt that influences of a powerful character were set in motion against favorable action upon these measures. Such influences can be overcome only by most persistent agitation upon the part of friends of the waterways. The members of the Legislature need to be enlightened on the subject matters. They do not understand or appreciate present conditions and dangers. There is room — indeed, necessity — for a committee of this body camping out in Albany, in order fully to inform the members of the Legislature and to keep track of these measures until their fate be settled. We may successfully agitate for waterway improvement; we may continue, as we have done in the past, to get the approval of the people upon referendum measures for canal enlargement and terminal facilities; we may use the millions now authorized but not yet expended, and many more millions that may be voted, for the purpose of opening up new channels of commerce and improving the condition of existing ones. But, unless we obtain legislation that will insure fair play and make these channels effective agencies, the money of the people will be largely wasted and their purposes defeated.

The Constitution of this State declares that neither the credit nor the money of the state shall be given or loaned to or in aid of any association, corporation or private undertaking, and that no county, City, town or village shall loan its money or credit to or in aid of any individual, association or corporation, or become directly or indirectly the owner of stock in or bonds of any association or corporation.

No one would tolerate a proposition that the property of the people be taxed to purchase the stock or bonds of a railroad corporation, that the corporation might with the proceeds acquire and develop transportation lines whether on land or water, according to the designs and interests of the corporation. And yet, we may as well do that very thing as to permit what is now not only possible but highly probable. The state bonds itself in huge sums to build and improve waterways that the facilities for commerce may be increased, that the cost of carrying may be kept within reasonable limits and that no monopoly of transportation shall be allowed to exist; and at the same time we neglect to heed and to provide against a continuance of the unvarying story of the effect upon water transportation where the railroad corporation was permitted to have free play with the water line. In this state to-day we might just as well invest directly in the stocks and bonds of the railroad company, as to tax ourselves to build waterways and then permit the railroad to dominate them. In fact, the railroad corporation should encourage such building, because it will find the waterway ready to its hand without expense to its treasury and its

control almost equal to that which it has over its own right of way and equipment. Any idea that the choking of competition and the domination of railroad influences over water lines may be prevented by power conferred upon a Public Service Commission to regulate rates on water routes, or rates upon freight shipped partly by water and partly by rail, will prove to be disappointing and futile. Even if some good should come from the conferring and exercise of such a power, there would nevertheless be a failure of the highest development of the canals and waterways as commercial and transportation agencies, because railroad capital, railroad influences and the competition of railroad corporations permitted to operate on water lines are and will be so overwhelming that the average individual or the average transportation corporation could not withstand the pressure. The only sure relief is in drastically made and drastically enforced statutory prohibition and exclusion. We have heard the cry and groan of New England over the monopoly of transportation of persons and property by the New Haven road and its absorption of steam roads, trolley lines and water lines; and the warning should be sufficient for New York. Our efforts should be bent to the accomplishment of three things:

1. To effectively exclude railroad corporations from acquiring any interest whatever in navigation companies or operating railroad-owned or controlled barges or vessels upon the public waters of the state.

2. Having, by the first, freed the waterways from the danger of monopoly of transportation and from the destruction of their competitive and regulative character, to compel such relations and co-ordination between rail and water carriers as will inure to the public benefit.

3. To bring the state laws as much as possible in harmony with the law of Congress found in the "Act to Regulate Commerce."

In 1911 there was passed chapter 778 which is entitled: "An act to amend the Transportation Corporations Law, by adding thereto an additional article, ten-a, providing for the incorporation of freight terminal companies."

By this law, such corporations were given large powers, including the power of acquiring private property by condemnation proceedings. In order to keep such companies free from other control, and to prevent further grabbing and appropriation of freight and storage facilities, particularly at water fronts, I had inserted in this act the following sentence:

"No railroad corporation, and no corporation or joint stock association engaged in carrying on what is known as an express business, shall either directly or indirectly, or through the medium of a holding company or otherwise, purchase, acquire, or hold any of the stocks or any bonds or other evidences of indebtedness issued by any corporation which is formed under the provisions of this article."

This was the broadest provision of its kind in the legislation of this state. In 1913 an attempt was made to reverse the policy proclaimed by this statute so far as it related to the City of New York and a bill was put through the Legislature exempting such corporations and associations in that city from the prohibition of the statute. The reason advanced was that such an exemption was necessary to enable the city to carry out its plans for terminal facilities, the acquisition of the Bush terminals and the construction and operation of a connecting railway which might be used by all corporations upon equal terms. A hearing was had before the Governor, and J. Purroy Mitchel and Commissioner of Docks Smith appeared in favor of the bill. I opposed it. I have no doubt that the city officials were honest in their views and purpose but I believe they were mistaken, and that interests hostile to the principle of the law were seeking its emasculation. I urged that the bill was unnecessary to enable the city to carry out its plans for harbor improvements and facilities and that if the principle of the law was good it should apply and be enforced equally in all parts of the state and not set aside as to the greatest port of the world. Mr. Gardner also voiced his opposition. The Governor vetoed the bill.

Other bills affecting harbors and waterways were before the Legislature and the Governor, among which was the hydro-electric bill; but as they were taken in hand principally by the Executive Committee of the Barge Canal Conference, I do not embrace them in this report.

Respectfully submitted,

WILLIAM J. ROCHE,

Chairman.

PRESIDENT HILL: This is another contribution to the work of this Association during the past year and those of you who remember the fight in 1904 will not forget that the Hon. William J. Roche of Troy made the opening, and a great speech, in favor of amending the Constitution as then proposed by commercial organizations in the state to encourage improvement of the waterways of the State. It was a great acquisition to the small number of canal advocates to have a giant of the calibre of William J. Roche of Troy to lead the band. (Applause.)

Now, gentlemen, we are to have an address, "A Menu of P's," by our genial friend, Dell Leland Tuttle of Buffalo, sales agent of the Philadelphia & Reading Coal & Iron Company, the largest producers and shippers of anthracite coal in the country, who, as sales agent, has shipped literally millions of tons of coal by lake, hence his interest in harbor improvement as well as in waterways. Mr. Tuttle has been for years a member of the Harbor Committee of the Chamber of Commerce and several times its vice-chairman. He has served in many other capacities. He has been a director and a superintendent of a railway system. He is familiar with transportation matters over railways and waterways and all other ways and has served very acceptably as a member of the Executive Committee of this Association for the last year, and especially in preparing for this Convention, being my associate with the Hon. George Clinton of Buffalo. He has contributed very largely to making this program what it is. It is very encouraging to have railway authorities, or at least those who possess information gained in railway transportation affairs, contributing to the success of waterway movements. I take great pleasure in presenting Dell Leland Tuttle of Buffalo. (Applause.)

A MENU OF P'S.

MR. TUTTLE: Mr. President, Ladies, and Members of the New York State Waterways Association: The kindly sentiments expressed by Senator Hill in his introduction and the cordial welcome accorded me, is ample remuneration for whatever services I may have been privileged to render. It is indeed an honor and pleasure to serve my city and state in an endeavor to forward the interests of the Association, and especially do I appreciate the privilege of meeting other enthusiasts in our annual convention.

This is an era of conventions and the purposes for which they are held, and the spirit which animates and dominates their guiding forces are diverse and frequently as far apart as the East is from the West.

It may not be out of place to enumerate some of the objects for which conventions are held:

Personal aggrandizement.

Advancement of business interests.

Increase of professional knowledge.

Charitable, philanthropic and religious purposes.

Public good and welfare.

All of these objects are commendable and laudable, particularly the last one mentioned.

The "public good and welfare" especially appeals to us at this time, and it is true that we must consider it from an unselfish standpoint as it ultimately concerns "every last man of us," for the reason that we are not and cannot be independent each of the other. On the contrary, we are very dependent, yes, I can make it stronger and say we are interdependent. Hence, the interest a broad, public spirited man should manifest in municipal, state and national

affairs. Therefore, conventions are held for an interchange of ideas, for encouragement and inspiration, and also to enable us to "keep in touch" each with the other. Our mutual interests will be better served by co-operation, rather than by conflict, and truly in unity of purpose and action there is strength.

A few years ago there was a terrible conflagration in a hospital, and thirty inmates had been driven by the pitiless flames to the end of one of the corridors, where the way of escape was blocked by a steel screen reinforced by several bars. The first man to reach the obstruction pulled and tugged in vain to break down the barrier. One cool-headed man saw certain destruction for them all unless relief was afforded quickly, so he organized two groups, of five men each. One group attacked the screen and soon pulled it apart, and with the assistance of the second group pulled out the bars, one by one, until an opening was made, through which they all reached a point of safety. One man individually could do nothing; ten men working in harmony not only saved themselves, but twice as many more—simply the power of association, that's all.

Association stimulates one to highest and best efforts, and as improvement seldom takes place without honest, forceful, well-directed effort it is noticed that such efforts usually bear fruitage of improvement. This has been especially true in waterways matters and waterway systems of the Empire State.

We do not find that there has been any movement inaugurated within the last decade looking toward the betterment of the great waterway systems of the Empire State but that has resulted in putting the question on a higher plane and left a distinct impress for betterment, which has followed either directly or ultimately. No effort has been barren of results, although many have not accomplished what was desired. There is much yet to be done, notwithstanding all that has been brought to pass.

In order to lead up to a consideration of some of the topics which it has seemed to me might be of benefit, and also to have a text to talk to, or at, or around, as the case may be (or possibly for lack of a better title) allow me to serve you with "A Menu of P's."

As one is usually somewhat curious as to the component parts of an article of food that has been prepared to be partaken of—particularly if it is a strange dish—and as curiosity is by no means solely an attribute of the gentler sex, I will take you into my confidence by informing you as to the ingredients used, with the assurance that they have simply been stirred together, using a due and reasonable amount of seasoning, and will be served in five courses.

First Course.

P-R-O-J-E-C-T. What kind of project? P—Practical; R—Right; O—Ours; J—Justifiable; E—Excellent; C—Commendable; and T—Timely.

No project was ever yet launched but what there has been honest differences of opinion concerning it and these opinions must be respected. If based on a wrong premise they should be righted and no man is open to a charge of unsteadiness, insincerity or fickleness by reason of changing this opinion under such conditions.

Criticism is to be expected, and as long as it is neither captious nor insincere, it conforms to a celebrated writer's definition: "Criticism, as it was first introduced by Aristotle, was meant as a standard of judging well. It is like champagne, nothing more execrable if bad, nothing more excellent if good." This being a waterways convention, and the speaker a passenger on the water(ways) wagon, I cannot vouch for the accuracy of the second paragraph of the definition.

There will be opposition—that, too, must be expected—if it is a live project, for if it has no opposition it certainly is a "dead one," laid away with a tombstone at its head in the cemetery of oblivion.

What are the projects which we as an association are especially interested in at this time? The construction, maintenance and improvement of the waterways of the State of New York, both artificial and natural. The conservation, development and control by the State of New York of its natural water resources, as well as the power developed therefrom.

The adoption of the pending amendment No. 4 to the Constitution (popularly known and referred to as the Burd Amendment, which proposes to amend section 7 of article 7 of the Constitution, providing for a specified portion of the forest preserve lands, to be used for the storage purposes of water and for the construction and maintenance of reservoirs for municipal water supply and also for water supply for the canals of the state, with a provision to regulate the release of storage water to provide for the regular flow of streams); the proper use and application of all legitimate influence and persuasion upon the Congress of the United States in order to secure needed improvement of harbors and rivers of the State of New York which are under United States jurisdiction; and last, but not least, the New York State Waterways Association, its aims, objects, growth and adequate support.

With such a splendid array of projects, appealing, I am sure, to every individual in this audience, what is one of the prime requisites in order to promote their welfare?

Second Course.

P-E-O-P-L-E—What kind of people? P—Progressive (including also Democrats and Republicans, and for fear we have not provided for the numerous types of politics other than the foregoing, we will put in an “etc.,” and dump all the rest in that); E—Energetic; —those with an objective (aiming at something); P—those with a perspective (perceiving the proper relations of matters and affairs); L—Liberal (broad-minded); and E—Everybody.

A recent writer divides useful people into three classes: (1) Those who read; (2) those who think; (3) those who act. I would like to add (4) those who *do* things. I would not decry classes one, two and three, but I do like class four folks, because there are so many people who don't want to do anything if they have to do anything to do it.

What ought people to do?

Leaders are required to lead, and this Association, beginning with the efficient first President, Robert J. MacFarland, his able successor, Patrick W. Cullinan, and the present well-equipped, successful President, Henry W. Hill, has indeed been fortunate in its selection of its leaders and their assistants. May their shadows never grow less!

What ought the people to do? A little couplet that I learned away back in the springtime of life suggests itself to me at this moment:

I cannot do *everything*,
But I can do *something* —
What I *can* do, I *ought* to do;
What I *ought* to do I *will* do.

Third Course.

P-L-A-N. “Order is Heaven's first law.” “Let all things,” says the sacred writer, “be done decently and in order.” It has been said of order that it is the sanity of the mind, the health of the body, the peace of the city, the security of the state. To this might be added: and one of the prime factors in the successful conduct of any enterprise. Haphazard, happy-go-lucky methods “don't go” in these strenuous days, and a man who is up-to-date and down-to-business formulates and has constantly before him a well-defined plan as a basis of his work. He thinks, acts and succeeds. A plan is necessary. How shall we plan?

P—Persistently; L—Liberal. When shall we plan? A—Always and N—Now. No farmer expects a crop who has not sown the seed, and if he sows sparingly he knows full well the character of the crop he will secure. The analogy holds good in any undertaking. Planning on a liberal scale does not imply a reckless or indiscriminate use of money; neither do we want the other extreme, and be parsimonious.

New York State occupies the proud position of leader in population and wealth, industrial, commercial and financial activities and is the acknowledged “Empire State” of the Union. By reason of its pre-eminence and its com-

manding position and influence, great things are expected of it, and all planning must be done on a scale commensurate therewith. Its history from the time of the inception of the project of the Erie Canal, down to the present moment, in pouring out literally millions of dollars for waterways, indicates that the people have realized their duty and responsibility. Most nobly, from a civic and patriotic standpoint, have they always responded, and supported and helped to put in effect plans formulated for the upbuilding of the state's waterways.

We must plan to keep posted as to the outlook, development and need of waterways and waterways improvements, not only in our own section, but in the other sections of this great country of ours, in order that we may have a nation-wide view of this great and ever-increasingly interesting subject.

We do not want to be in the confused state of mind that the Irish woman was who was being cross-questioned by a lawyer, in a case in court. The point under inquiry was the relative positions of doors, windows, etc., in a house in which a certain transaction had occurred. "And now, my good woman," the lawyer said, "will you be good enough to tell the court how the stairs run in your house?" "How do the stairs run?" the witness replied. "Shure, whin I am upstairs they do run down, and whin I am downstairs, av coorse they do run up."

Do you want to know how the stairs run in waterways matters? While every man can continually increase his own knowledge by the experience and knowledge that comes to him, it is a slow process, and one that is limited in its scope and usefulness by reason of restricted outlook and opportunity. Consequently there is a necessity for a broader outlook, and for opportunities to profit by the experiences and knowledge of others who are interested in the same matters and affairs, or who have interests that are closely allied. These experiences, as well as articles based on them, find expression in the various journals published in the interest of waterways, and if the publications in question only used their columns for the above class of items, subscriptions would be a good investment. What, then, shall be said when we consider what is placed before the readers of the ably edited journals maintaining and upholding the improvement and development of waterways, news, home and foreign, review of conditions, correspondence from representatives at the great commercial and marine centers, special correspondence from members of the editorial staff, not to mention other well-known features? Simply this, we cannot afford not to take journals and magazines that advocate all that the various waterways associations, improvement associations and the National Rivers and Harbors Congress stand for. A splendid type of the publications referred to is found in the "National Waterways" magazine, a most artistic production published under the auspices of the National Rivers and Harbors Congress, and edited by S. A. Thompson. In this connection I would not overlook publications issued in behalf of and advocating local interests.

This Association has its own official organ, "Waterways and Commerce," edited and published by one of our members, and a member of the Executive Committee, Mr. Richard M. McCann, which amply deserves the support of the membership of the Association. Let us aid Mr. McCann and his publication, and they will, each of them, aid the Association to the fullest extent of their ability.

When we think how busy the great leaders of commerce and industry are, and recall also how well informed they are, we somehow conclude that the reason why they are leaders is because they are so well informed. The man who conducts any enterprise successfully can never be too busy to read.

Plan to increase the interest in the New York State Waterways Association; plan to increase its membership; plan to increase its revenue; plan for addresses to be delivered concerning its aims, objects, accomplishments and usefulness before business men's associations, clubs, chambers of commerce and boards of trade, civic organizations, men's luncheons, yes, and in assembly halls of our schools, and from our experience in Buffalo, you will be surprised at the interest created.

Howard D. Hadley and Edward N. Smith, of this Association, and others in the state-wide campaign in the interest of Amendment No. 4 to the State Con-

stitution, are demonstrating what can be done in the way of securing publicity through the medium of editorials, contributed articles, and press notices in the New York State newspapers. The effect of their work will surely be seen in the surprisingly large vote that will be rolled up Tuesday, November 4th, in favor of this amendment. Watch the returns and see if I have not made a pretty fair prediction as to the outcome.

"The property of the country is measured and will be measured by the ability of its railways and waterways to transport its increasing commerce. With all the means of production developed to a wonderful state of efficiency the continued advancement of this great people depends primarily upon such an increase of transportation facilities as will provide prompt and safe movement everywhere from producer to consumer."

These are the words of an eminent authority on transportation matters, Hon. Martin A. Knapp, formerly chairman of the Interstate Commerce Commission.

It is therefore of prime importance that the public generally should be accurately and fully informed concerning waterways, proposed new construction, improvements under way, improvements desired, etc. How can this be better done than by furnishing the newspapers with items and articles for insertion from the standard journals giving accurate and trustworthy information pertaining to subjects and matters the Association is interested in and stands for. Let us get all the legitimate publicity we can for our organization. Advertising pays. I came across a case in point the other day:

A Denver paper tells of one Billy Jones, who wrote on the blackboard at school: "Billy Jones can hug the girls better than any boy in school." The teacher, upon seeing it, called him up. "Willie, did you write that?" "Yes, ma'am," said Billy. "Well, you can stay after school." The children waited for Billy to come out and began to guy him. "Got a lickin', didn't you?" "Nope." "Got jawed?" "Nope." "What did she do?" "Shan't tell," said the astute William, "but it pays to advertise."

Someone with an inclination to drop into verse has proposed the following, with reference to advertising:

"The man who whispers down a well
About the goods he has to sell,
Will never make the shining dollars
Like he who climbs a tree and hollers."

The New York State Waterways Association, and what it shall accomplish, is largely what we determine it shall be and do.

"The purpose firm is equal to the deed;
Who does the best his circumstance allows,
Does well, acts nobly; angels could do no more."

"Mix a little ginger with the dried apples to make a more palatable dish," says the experienced housewife. Mix a little "ginger" with the New York State Waterways Association matters and watch the result. Promote ourselves into class No. 4 — people who do things.

What can we do?

Fourth Course.

P-U-S-H — that means work. How shall we Push? P — Persistently; U — Unceasingly; S — Not Slothfully; H — Hard.

Carlisle has said, "The modern majesty consists in work, and what a man can do is his greatest ornament, and he always consults his dignity by doing it." These are wise sentiments, put in good, terse terms, and taken in connection with the fact that where we are is not of much moment (the question is, what are we doing there?), furnishes an incentive to us to do our best at all times and not look mournfully into the past, bewailing our mistakes. Uncle "Zeb" has put the case very forcibly, when he says, "If we could go back and lib our libes ober again none ob us would make the mistakes we hev."

We'd simply make others just as bad or a plaguey sight worse. Fact is natur' calkerlated on a man pickin' up a bumble-bee by de wrong end now an' den, an' dat's de reason de bee is built de way he is."

Sometimes in the spirit of enthusiasm in our work some may say that our plans are Utopian and that we are building air castles. Any good in an air castle? Certainly; just build a good foundation under it. Be practical. We may be called visionary, yet it is a fact that every improvement of any kind, since the days of creation, has been the direct result of a vision. Someone saw something—ideas were formed, the ideas developed into plans, and plans into work and work into accomplishments, and to-day's achievements are only yesterday's accomplishments grown into their prime.

DeWitt Clinton in the early New York days was called "visionary"—"a dreamer," yet the world-renowned and ever famous Erie Canal was the result of Dewitt Clinton's vision and dreams.

There were other and latter-day dreamers in our State: Hill and Marshall in the Legislature; Gardner, McConnell, Schwab, Hobart and Brainard of New York City; Speaker Nixon, Clinton, Greene and Scatcherd of Buffalo; Senator Ellsworth, Roche of Troy, Witherbee of Port Henry.

That their "dreams" were not of the "pipe" variety is evidenced by the fact that New York's crowning glory—the magnificent one thousand-ton Barge Canal project—became an actual reality, and is rapidly approaching completion (without a single penny of national aid), entailing a vast expenditure by the Empire State aggregating one hundred and thirty million dollars.

What more practical and pleasing part in the celebration of such a momentous occasion as the completion and opening of the Barge Canal can be suggested than that a flotilla of barges or house boats, properly equipped for the purpose, be arranged for by the New York State Waterways Association and a trip "a la packet boat" be made by its members from Buffalo to New York.

As to "dreamers;" "there are others, too," and on November 4th we'll all help to make another "dream" come true, another "vision" to be realized, when we will vote for Amendment No. 4, and roll up a majority for it that will surprise its opponents and possibly its friends and supporters also. Every man on the job (pushing and voting) next Tuesday. The New York State Waterways Association "Expects every member to do his duty!"

As we "Push" let's do it in the right way, not like the new brakeman who had just entered the railroad service and on his first run encountered a steep grade. With unusual difficulty the engineer succeeded in reaching the summit. At the station, looking out of his cab, he spied the new brakeman on the platform, and said with a sigh of relief: "I tell you what, my lad, we had a hard job to get up here, didn't we?" "We certainly did," said the brakeman, "and if I hadn't put on the brakes when we started up and kept them on, we'd surely have slipped back."

Phillips Brooks said in one of his addresses, "If things don't go, push them. Push hard. Keep on pushing. All things are possible to the man that pushes; no difficulties can frighten him; no failures can discourage him; success is as certain to follow him as night the day." What is the talent of success? Nothing more than doing what you can do well, and doing well whatever you do.

In working to advance the interests of our organization, keeping in mind the above injunctions, let us also remember what sage old Uncle "Zeb" says: "Hope and Desire ain't knee-high to Hustle and Doing."

In addition to Planning and Pushing there is one other thing we can do.

Fifth Course.

P-A-Y—How shall we Pay? P—Promptly. When shall we Pay? A—Always. Whom shall we pay? I note from your looks that you have already guessed the answer. Y—You, of course!

A clergyman once said to me, "I would like to preach a financial sermon, if I dared to do so, from a certain text that you will find in the parable of the Unjust Steward. I looked it up and found the text referred to, reading as follows: "And he laid hands on him, and took him by the throat saying, 'Pay that thou owest!'"

Some of us are so situated that it is not possible for us to devote time to waterways work, but we can do at least what in days gone by the farmers who were going to have a "raising" asked their neighbors to do "either come or send a hand." In the present instance "sending a hand" means to help on the expense account. When we ride on the water(ways) wagon, we ought at least to help pay for the axle grease.

What we put our money into we soonest become interested in, and in taking a financial interest in the organization we not only help others, but by the universal law of reflex influence, we also help ourselves.

Some objectors to any project or enterprise are usually the poorest payers. A little boy was taken to church by his mother one Sunday morning and when the contribution plates were passed the boy noticed that his mother dropped in a big copper cent, the kind that makes a big noise at the time, but does not count much when the treasurer makes up his cash the next morning. On the return home the mother found fault with everything. The preacher couldn't preach, the organist was no good, the choir couldn't sing, etc., etc. The boy stood it as long as he could, and remembering the size of his mother's contribution, said, "Well, Ma, what could you expect for a cent anyway?" We do not want to pay on the principle of another small boy who, when the collection plate was passed at church, made a grab at the contents and turning to his father said, "Papa, I got a quarter, how much did you get?"

We pay as a duty and a pleasure, realizing the force of a homely and well-known proverb, which, if expressed in Bostonese would read something like this: "A requisite amount of the circulating medium—the coin of the realm—is a necessary requisite if you desire the female animal of the equine species to perambulate," in other words, "It takes money to make the mare go."

There are no passes on the waterways, and of us it can be said as of the prophet of old in Holy Writ, who was sent on a mission, "so he paid his fare and he went." The Treasurer of this Association has waterways tickets, first class, round trip, unlimited, good for a whole year. Got yours? Here's mine. Has your neighbor his? Firms, corporations, local associations, boards of trade, chambers of commerce, are all eligible—and as a reference for rates, see Article VII, Constitution and By-Laws, page 13, 1912 Proceedings of the New York State Waterways Association. Let us all get busy on the line of increasing our membership among the above enumerated eligibles, and thus afford an adequate income for the use of the Association.

A standard railroad rule is, "In case of doubt always take the safe side." If you are in doubt as to what you ought to do see Treasurer Olin J. Stephens, and you will get some good advice worth following.

Give waterways matter a chance and like a small boy with a piece of chalk, they will surely "make their mark."

Now, my friends, in matters pertaining to the Waterways Association, *don't* be like a camel "always going around with your back up." On the contrary, in Waterways Association matters *do* be a camel, always "humping" and not neglecting or forgetting to PLAN, PUSH and PAY. (Applause.)

It had been announced on the program that the delegates were to be given a ride about Albany harbor on the Hudson River steamboat "Trojan" Saturday morning. It was voted at this time to substitute for the boat ride an automobile ride to the Waterford Level, the Crescent Dam and the Barge Canal locks.

HON. GEORGE CLINTON (presiding): Gentlemen, the address which we have had from Mr. Tuttle, while somewhat humorous in form, is so full of good, sound common sense that I wish the main points could be put in print and posted all over our home offices.

The absence of the next speaker, Hon. Willis H. Tennant, of Buffalo, who was to speak upon "The State Canal System and Its Rural Communities," makes it necessary, in order that we may get through with our work, to proceed to the next item upon the program, and that is an address upon "Six

Years' Experience of Public Service Corporations Under State Regulation," a subject which is entirely germane to the business which we have under consideration and for which we are working.

If you will recall the remarks of Mr. Roche, you will remember that a portion of the legislation in order to co-ordinate railroad and waterway traffic, which this Association has advocated, was put in concrete form last year by the preparation of the bill proposing to place waterways and railroads, so far as they connect with waterways in transportation, under the control of our Public Service Commission. No one is better able to give us a view of the experience of public service corporations under the present law of this state than the next speaker, and it is not only with great pleasure that I introduce him, but it is with the expectation—which I know will be fully gratified—that we will not only hear very interesting remarks on the subject, but that we will get that which is useful and educational, tending to inform us as to the actual working out of the law under which the Public Service Commission was created. I have the pleasure of introducing the next speaker, Mr. James T. Hutchings, of Rochester. (Applause.)

EXPERIENCE OF CORPORATIONS UNDER REGULATION.

MR. HUTCHINGS: Mr. Chairman, Members of the New York State Waterways Association: Your President has thought that the subject to which I shall call your attention for a few moments, while not directly in line with the principal activity of this Association, is of such vital interest to the general welfare of the state that we could well afford a short time for its consideration.

On July 1st the Public Service Commissions Law of the State of New York had been in effect for six years. I do not believe that most of us realize the immense benefit which this act, creating the two Public Service Commissions—one for the First District, including Greater New York and immediate vicinity, and the other for the Second District, including the rest of the State—has been to us all. The duties, activities, and responsibilities of the two Commissions have been so great that they have had insufficient time at their disposal to inform the people of the state of the great and useful work which they have accomplished.

While commissions, with responsibilities and powers somewhat similar to the commissions of New York State, had been established in other states prior to 1907, no commission to this date had been given the broad powers and responsibilities conferred by the New York State Public Service Commissions Law. Massachusetts had had its Gas and Electric Commission for more than twenty years prior to this date, and New York had its Railway Commission and Gas and Electric Commission for a short time. Consider for a moment the tremendous responsibility of these two commissions, affecting as they do all railroads—steam or electric; all common carriers—freight, sleeping car, and express companies; all gas and electric, heat and power companies doing business in the State; and recently there has been added to this the responsibility of all the wire companies, so-called, which includes the telephone and telegraph companies in the state.

Perhaps the immense responsibility imposed upon the Commission under this law appeals more to me than to many others, as after having spent twenty-five years in the electric power business exclusively, I still feel keenly the lack of appreciation of all of its possibilities. I would further state that, in my opinion, the governors of the state have appreciated the importance of these two commissions, and the general personnel from the beginning has been a credit to the state. The policy of former Governor Hughes in appointing, as he did, men of high character and integrity to the position of commissioner should be continued by his successors, and the Public Service Commissions should continue in the future, as they have been in the past, a credit to the great State of New York.

Consider that from the moment we arise in the morning we make use of the service of corporations or institutions coming under the control and supervision of the Public Service Commission—when we turn on the electric light,

or light the gas to dress by, and, in many communities, when we take a morning bath, when we eat the morning breakfast, when we ride to our work in the street car or the steam car, when the telephone is used for ordering the necessities of the household, when the products of our factories are shipped and raw material received—in fact, whenever we turn around. Think what it would mean to us were all of these activities discontinued for only twenty-four hours. The only words which could describe the situation would be that “the world stood still,” and our civilization returned to chaos.

In the light of the foregoing, one of the wisest provisions of the law was that in the general scheme of the appointment of commissioners the term of service was to be five years, except in case of death or removal for cause, and one new commissioner was to be appointed each year. This wise provision furnishes a continuous policy, and gives to the state at all times the benefit of one man of four years' experience, one with three, one with two, and one with one, and a new commissioner coming to the commission with perhaps a closer touch to popular sentiment and thought. Through this wise provision we have available men of experience and ones in close touch with the general sentiment and popular demand. We have all undoubtedly heard said, “What has the commission accomplished?” Any body of men appointed to positions of this great responsibility will receive criticism from all sides. It would be impossible for them to please everybody. In the administration of justice it is impossible for the judge to fully satisfy both the plaintiff and the defendant, but the main point is in having the matter closed. Deep down in the hearts of both the plaintiff and the defendant they know that they have had justice, and they immediately forget the point at issue and go on with their activities; whereas, had the point not been decided their attention would have still been centered on the controversy.

The two great dangers of commission regulation are, first, that the regulation may be of a character that will make it impossible or difficult to secure capital; and, second, that it may be of a character to discourage individual endeavor.

Since the commissions have been in office decisions and rulings have been made, some of which would tend to encourage and others to discourage the investment in public service properties. Among the first important cases were several which involved the subject of competition, and in this connection the commissions stated definitely their opinion that competition between public service properties operating in the same territory was wasteful and uneconomical. This attitude was later qualified by rulings to the effect that competing companies would not be allowed to enter a field already occupied if the service being rendered was adequate and the rates reasonable, but that under other circumstances, and where the present company showed no inclination to improve conditions, permission might be granted to a competing company to enter the field. These rulings were encouraging to investors in public service properties.

In regard to approval of issues of bonds or stocks, the commission has stated several times that its decision in no way insured the safety of the investment, but merely indicated that in its opinion the money was reasonably required for proper purposes of capitalization. That the approval of the commission to an issue of securities has some effect upon the market value of the securities is indicated by the fact that practically all advertisements of issues contain the statement that they have been approved by the Public Service Commission having jurisdiction, and in some cases these advertisements quote from the opinions of the commission.

The requirements of the commission for a proper method of accounting have, I believe, had a good effect, as it is now possible to secure very complete data in regard to any company, which adds at least an apparent element of safety to investments.

The rate of return permitted in rate cases, running from 7 to 7.5 and 8 per cent. on the value of the property, while perhaps not enough to interest capital to a great extent, indicates that new money put into a property will be permitted to earn a reasonable rate of return, and that no rulings will be made which are confiscatory.

On the other hand, probably the most important factor is the method of arriving at the value on which a company may earn a return. It has seemed to many that in this respect the commission has been rather severe.

The law, requiring as it does that stock must be sold at par, has entirely prevented the customary method of financing properties, and the risks of the business having remained the same, the organization of new properties has probably been somewhat retarded. The same thing doubtless holds true as to consolidations, many of which would seem to be desirable.

It appears to me that the second danger—that of diminishing individual endeavor on the part of operating executives and their subordinates—is a greater danger than that of discouraging capital. While we are hearing a great deal at the present time of a new “idealism” in public service, there are as yet few operating officials who do not consider that higher dividends are a better measure of success than low rates. When the manager knows that increased efficiency or increased gross income will result not in increased profits to his employers, but in lower rates to his consumers, he has not the same incentive as he would have under reverse conditions. We should have the incentive of higher rates of return on capital invested if, through better efficiency, management, and the purchase of new apparatus, we can reduce the rate of charge for our product. As an illustration: in two communities, “A” and “B,” similarly situated, each having a population of 50,000, “A” has a live, progressively managed light company with up-to-date commercial methods. “B” has the same equipment, so far as apparatus is concerned, but is not so fortunate in its methods in that it does not appreciate the possibilities of the business. Therefore, we have approximately the following tabulation:

	A	B
Capital invested	\$1,575,000.00	\$1,125,000.00
Average sales rate per K. W. H.....	.04	.06
Sales per capita	8.00	5.00
Gross earnings	400,000.00	250,000.00
Operating expense (ratio 60 per cent.).....	240,000.00	150,000.00
Earnings applicable to interest and taxes.....	160,000.00	100,000.00
Taxes on the basis of \$5 per hundred gross earnings.	20,000.00	12,500.00
Earnings applicable to dividends	140,000.00	\$7,500.00
Per cent. equivalent on capital invested.....	8.7%	7.7%

“A” has used 10,000,000 kilowatts per annum, while “B” has had the benefit of only 4,166,000. “A” has received in taxes \$20,000, while “B” has received \$12,500. In other words, “A” receives its service at 33 1-3 per cent. less than “B” and is well served and well satisfied, while “B” is not satisfied with either its service or its rates, although the capital invested in the enterprise is receiving a less return than that invested in “A.”

The conditions cited are not at all exaggerated, and the reports of the Public Service Commission for the last six years will show similar cases.

Let us assume in the example cited that the commission stands on the ruling that all companies shall be allowed to earn 8 per cent and no more. “A” has in this case a return of 0.7 per cent. greater than it should have, although it is furnishing nearly two and a half times the service and at one-third less rate than “B,” and is paying \$7,500 more per annum in taxes. “B’s” rate under the same ruling is too low, and should be raised sufficiently to bring in a return of 8 per cent. on the capital invested.

It is facts and conditions like these which make it necessary that we continue to place men of intelligence, sound judgment and experience and undoubted integrity on our commissions, for if we do not, what inducement is there for the expenditure of brains and money to serve the public as it is entitled to be served.

In outlining some of the benefits of the commission, you will pardon me if I speak along the lines that I have been most familiar with. In order to appreciate the situation, it is necessary to review briefly the conditions which obtained in the electric lighting business from its inception until the establish-

ment of the commission. In the early days of electric lighting there were a large number of independent manufacturers with various systems of lighting, each system protected by patents. Each manufacturer was anxious to sell his apparatus. The cost of apparatus and installation was high, and the cost of the service rendered was also high. The people were anxious for the new service, and corporations were promoted by each of the various manufacturers in all of the communities of any size throughout the country. Franchises were given freely to all comers, business was uncertain, apparatus more or less unreliable, and the inherent risks from a financial point of view extremely hazardous. Each company was striving for the cream of the business, and no efforts were made to supply an adequate service for the entire community in any town or city. For a few years there was tremendous scramble and strife, each company doing its utmost to destroy the other, with the result that in most cases the operating expense was more than the gross receipts, and when, for a considerable period, the investor had received no return upon his investment in these various properties, the natural consequence was the purchase of the weaker concerns by the stronger ones, with the ultimate control vested in one corporation. Under these conditions it was natural that the investor, seeing a chance to recoup his losses in the earlier period, should advance rates very materially over those charged during the fierce and disastrous competition period, and many shortsighted managements brought upon themselves the just condemnation of the communities which they served.

The effect of these consolidations was the cutting of operating expense through better supervision, engineering, purchasing, and the inherent economies possible through larger business. Most of these early consolidations made money, and while the public was pleased to have only one line of poles and wires where formerly there had been from two to six, and to have an improvement in the service, the radical and unexplained increase in cost of service naturally created adverse criticism. This criticism and adverse feeling vented itself in one of two ways—either in the establishment of a municipal plant or in the granting of additional franchises for new companies to invade the field, with disastrous results, so far as service was concerned, to the community. In the cases where additional franchises were given, new companies were organized and new systems installed. The only salvation was for another consolidation, and while in most cases these consolidations were made largely upon the basis of the money invested by the various corporations involved, the result was a much larger capitalization than would have been required had the same service been installed under one company. This fact I believe is borne out by the experience in the State of Massachusetts, where the Gas and Electric Commission has been in existence practically from the advent of the electric power business. Their records show that there is not as large a capitalization for the amount of business done as in cities where there is no state supervision.

The advent of the Public Service Commission in this state has changed this situation. The investor is assured of a fair return upon his expenditure if the property is well managed. The people are guaranteed reasonable rates through the supervision of the issues of all stocks and bonds or other forms of indebtedness, assuring to the public since the enactment that they will not be asked to pay a rate beyond that necessary for a fair return upon the money invested; and I believe the facts justify the conclusion that, on the average, electricity is sold cheaper in New York State than in any other state in the Union. The inherent duty of the commission, as it appears to me in the Public Service Commissions Law, is to see that the people have adequate service, fair treatment, and a reasonable rate; that the investor shall receive a sufficient return upon his investment to make him interested in furnishing further capital for extensions, which return must be sufficient so that capital can be obtained in adequate amounts in competition with the bids of other lines of activity for this capital.

It has been said by some that commissions have not been as active or as progressive in their control of the supply companies as they should be; that the rates charged are too high; and the service rendered not all that could be

desired. It is natural for us all to feel that whatever the price we pay for an article we would be better pleased if the price were less, but, on the whole, we are satisfied, and prefer to deal with the person or concern which is making money rather than the concern which is losing, as we know that the service will be better and, in the long run, the price less.

It is characteristic of human nature as a whole that we do right because we believe it is the best policy in the end. The fact that managers of properties under the regulation of the commission know that all their acts of policy, rates, and, in fact, their entire method of handling their business as it affects the general public, are subject to criticism by the commission must, of necessity, make this management more particular in preparing its general rules and regulations. The fact that the people know that rates of charge can be changed by the commission, and that meters used for measuring the commodity purchased are under commission supervision, tends to a higher standard of efficiency. If the customer is dissatisfied, and feels that the meter is incorrect, all that is necessary for him to do is to make application through the commission to have his meter tested, and if the meter is found incorrect the cost of testing is paid for by the supply company. In cases where communities or any number of customers are dissatisfied with the service or the rates charged, they can, through the mayor of their city or the petition of one hundred customers, demand from the commission a thorough investigation and decision, and while these investigations by the commission must, of necessity, be somewhat drawn out in order to get a thorough and complete knowledge of the situation, I believe that in every case the rights of the public have been protected, and in no case thus far has the company proved that the decisions of the commission have been confiscatory.

While there are still some of the public who feel that there is no necessity for public service companies, and that all of these various activities should be owned and operated by either the state or municipality, I believe it is almost needless to call the attention of an intelligent audience to the many reasons why this is impracticable, but for the benefit of those who still have the municipal plant idea I wish to call attention to the following:

All state and municipal developments are made on the basis of popular demand, without consideration of the economic necessity or the question of "Will it pay?" Further, owing to constant changes in political parties in power, there can be no continuous business policy, and for the same reason the executive management must, of necessity, give its first attention to politics, which in their case means self-preservation rather than the business in hand. Advancement in position and pay will go by political favor rather than ability. The cost of operation will always increase just before election, as positions must be made for and filled by "the faithful," and these positions when once filled are not vacated unless the money to pay the salaries is cut out of appropriations therefor.

To show how popular demand may warp the judgment of engineers in making estimates, and how estimated costs of public construction are kept down until the project has received popular approval, I wish to call attention to a few figures taken from page 742 of the Hydrology of the State of New York by George W. Rafter:

Erie Canal, original estimate	\$4,926,738.00
Actual cost	7,143,789.00
Hoosac tunnel, state engineers' estimates.....	1,948,557.00
Actual cost	20,241,842.31
Manchester Ship Canal, engineers' estimates	26,000,000.00
Actual cost	67,351,105.00
State Capitol, Albany, estimate.....	4,000,000.00
State Capitol, Albany, cost	24,000,000.00

If, through public control and regulation by commissions, we can get as good or better service and at as low rates, and as most of the lighting companies are doing—still pay in taxes from 5 to 7 per cent. of their gross

receipts, and with this pay a fair return of from 6 to 10 per cent. on the necessary capital invested, we will have maintained a higher economic standard.

In closing, I would state that in my opinion six years of commission regulation has warranted the establishment of the commission, and has placed public service companies upon a higher plane than previously. I wish to emphasize the necessity, so far as possible, of keeping the commission out of politics, and of the appointment of high grade men. If this is not done, and we return to the condition of twenty years ago when undue privileges could be obtained if paid for, the people and the companies will be in worse condition than ever before, for in the hands of unscrupulous persons these commissions, as we all know, could be made the greatest vehicle for collecting graft that has ever been conceived in this state. The companies certainly prefer to treat the people fairly, and if there is anything to be given, to give it to the consumers who make their business possible rather than to any one else, and the people must be assured that the integrity of the commission is above reproach. I am not at all pessimistic in regard to this matter, and believe that on the whole we may rest assured that the people will demand of their officials that high grade of integrity which has been obtained in the commission to date, and my appeal is that the members of this Association use their influence to see that the Public Service Commission is maintained as an independent body, and not allowed to become a part of any political machine.

HON. GEORGE CLINTON (presiding): Ladies and Gentlemen: It is indeed gratifying to learn from the lips of one who is connected with a public service corporation, who has been in that business for many years, the fact that public service corporations recognize the great value of the Public Service Commission to the public, and not only that, he gives the reason, and there are many of us who know that those reasons are well founded.

It is true that there are many of us working in the interest of the public advocating waterways and the activities connected with their use. It is true that quite a number of us, putting our shoulders to the wheel, come before the public and before the members of this Association in the guise of promoters of the public interest, entitled to credit for what we do, perhaps. But we are apt to overlook, and the public is apt to overlook, the fact that there are many who are working silently and unostentatiously—I mean silently so far as appearing in public is concerned—that are really bearing the burden which enables us of this Association to achieve something, as we have in the past and expect to in the future, in the line of the promotion of the interests of the people of our state and of the nation by the improvement of our waterways. Among those is a man who is entitled to the greatest credit—the editor and publisher of a journal which is disseminated not only through this state but largely through the nation, that is doing a great work for all of us, and work which promotes the efforts of this Association in the line of water transportation, including all its branches, and, among other things, the improvement of our waterways. From such a man we like to hear. Such men we ought to recognize and honor. And it is this that gives me the greatest pleasure in introducing the next speaker upon the program, who will address us on “Waterways and the Merchant Marine,” Mr. Richard M. McCann, editor of “Waterways and Commerce,” of New York. (Applause.)

WATERWAYS AND THE MERCHANT MARINE.

MR. McCANN: Mr. Chairman and Delegates to the New York State Waterways Association: The New York State Waterways Association is beyond question the most important organization of its character in this country. I say this because here in the Empire State we have the great Barge Canal—the Father of Waterways. This magnificent waterway will be a memorial to the greatness of the people of the State of New York for all time. It has been constructed by the people without pecuniary assistance from the Federal Government and as an engineering problem it presented more diffi-

culties than did the Panama Canal. As an aid to commerce it should surpass the Panama Canal. These statements can be verified by a few comparisons between the New York State Barge Canal and the Panama Canal. Here are the figures:

Barge Canal.

540 miles long.
Total lockage lift, 1,050 feet.
Dams, 39.
Locks, 57 lift, 2 guard, and 9 smaller locks.
Number of structures, between 350 and 400.
Cost, \$127,800,000.
Excavation, estimated total, 114,100,000 cubic yards.
Concrete, estimated total, 2,750,000 cubic yards.
Excavation to January 1, 1913, 78,428,286 cubic yards.
Work begun, April 24, 1905.

Panama Canal.

50 miles long.
Total lockage lift, 170 feet.
Dams, 4.
Locks, 6 pairs.
Number of structures, 12 locks, 1 spillway and 4 dams.
Cost, \$375,000,000.
Excavation, estimated total, 203,710,000 cubic yards.
Concrete, estimated total, 5,000,000 cubic yards.
Excavation to January 1, 1913, 188,280,312 cubic yards.
Work begun by Americans, May 4, 1904.

The Panama Canal has been built by a nation of 90,000,000 people at a cost of \$375,000,000. The New York State Barge Canal has been built by a state with a population of 9,000,000 people at a cost of \$127,800,000, and so I say it will be for all time a memorial to the enterprise of the people of this great state. And this great memorial has been made possible by the foresight, patriotism and perseverance of men who are within the sound of my voice, members of the New York State Waterways Association, who for a generation have worked without pecuniary reward in the interest of waterway development and who now meet in the Fourth Annual Convention of the Association, not for the reward of recognition for their efforts, but to keep alive the thought that the conservation of the water energies of to-day is the storage of power for use in the future.

I entertain the hope that the New York State Barge Canal will prove a boon to future generations and that half a century hence, the people will bless the sagacity of the men of to-day who built so wisely for them. Thus it is that we of to-day look back to the founders of this great republic and honor them for the wisdom they have shown in planning work that has proven so beneficial to succeeding generations. Born as was this republic of ours of an intense desire for religious and political freedom, the people realized when victory crowned their arms, that commerce, not conquest, was the foundation upon which to build for the benefit and prosperity of the nation. Thus it came about that the early patriots in drafting the Constitution of the United States enumerated among the most important duties of Congress the care of the waterways of the United States. This injunction was embodied in the first article of the Constitution, section eight. At that date, steam as a motor power on water was only talked about, and railroads were not thought of. The immortal Washington gave more thought to canal construction than to any other public utility work and invoked the assistance of Robert Fulton in his study of canal development.

In 1797 Fulton wrote at length to George Washington regarding the benefits of his canal system for the American states, saying "in about sixty or seventy years, Pennsylvania will have 9,360 miles of canal, equal to bringing water carriage within the easy reach of every house, and no house would be more than ten or fourteen miles from a canal. By this time, the whole carriage of the country would come on water even to passengers and following the present rate of carriage on the Lancaster Road, it appears that the tolls would amount to four millions per year.

"Having made this calculation to show that the creative system would be productive of great emolument, to subscribers, it is only further to be observed that if each state was to commence a creative system, it would fill the whole country, and in less than a century bring water carriage within the easy carriage of every acre of the American states—conveying the surplus labors of one hundred millions of men."

In this letter Fulton suggests a canal from Philadelphia to Lake Erie which may be said to be the initial step toward the construction of the Erie Canal, the precursor of the New York State Barge Canal. Seven years before this letter was written, Congress passed, on August 11, 1790, an act authorizing the formation of a River Machine Company at Providence and approved a duty on tonnage for clearing the Savannah River of Georgia of wrecks and other obstructions. The public treasury was so low in funds that no general appropriations were made and Congress had to content itself by passing such special acts. In 1812 the State of New York appointed commissioners to memorialize Congress for aid in the construction of the Erie Canal. A bill was drafted with the preamble setting forth the necessity for opening inland navigation and dwelling on the importance of the general system of waterways projected at that early date. This system planned a waterway along the sea coast from Boston to Narragansett, from the Raritan River to Chesapeake Bay, from Chesapeake Bay to Albemarle Sound, from Lake Champlain to the Hudson River, from Lake Erie to the Hudson River, the Susquehannah, the Muskingum and the Wabash, from Lake Michigan to the Illinois, from the Susquehannah to the Schuylkill and the Delaware, from the Roanoke above its great falls to the Schowan, from the Tennessee to the Tombigbee, from the Cooper River and the Black River to the Santee and from the Savannah to the Tennessee: also to construct locks around the falls of the Ohio and to improve the navigation of the Potomac above the falls.

The objection of representatives of other states to assisting the State of New York was so great that the bill introduced by the commissioners never left a sub-committee of Congress to which it had been referred. Had this project been executed, it is conceded that the supremacy of the United States as a maritime nation would have been assured, and the subsequent destruction of our merchant marine would not have been accomplished.

The advent of the railroad diverted the minds of men from the development of the waterways and the fatal mistake was made of permitting the railroads to monopolize the banks of rivers. We Americans, however, were not alone in this error. The English, Irish, and Scotch neglected their waterways even to a greater degree and with more disastrous consequences. So desperate had the condition of the waterways of Great Britain and Ireland become that in 1906 a Royal Commission was appointed to inquire into and report on the canals and inland navigation of the United Kingdom. This commission made its final report in 1911, recommending that a waterway board or permanent commission should be appointed with control over all waterways, "and that the commissioners should be persons disassociated from party politics." That commission found the antagonism of railroad management to canal development so great that it reported that the problem could only be solved by taking it out of politics. The matter is still in abeyance in England and you pioneers of the New York State Waterways Association have every reason to be proud of your great work in making the New York State Barge Canal an actuality. This was not an easy task. In 1862 the New York State Legislature declared the Erie Canal completed, and from that time there was so much opposition to further improvement of the canal that in the late '70's four branches of the system were abandoned. Then in 1884, a group of men, representing all parts of the state, some of whom are now present, revived plans for increasing the size of the locks. Then followed the movement for deepening the channel to nine feet which was the opening gun of the battle for a broader canal policy—a battle which you gentlemen of the New York Waterways Association won and which should encourage waterways associations from the State of New York to the State of Washington to fight unceasingly for national waterway development.

It has been my good fortune to have crossed this continent on several occasions and everywhere have I seen our waterways neglected. Time will not permit a sketch of our waterways that could be linked and made navigable from the pine clad hills of Maine to the golden shores of California, but they must be linked and made navigable of this nation means to measure up to its fullest development. Our immediate duty is to make the great New York State Barge Canal commercially profitable — profitable to the people of the state who have contributed every penny of the \$127,800,000 expended in its building. We owe it to the people to see to it that they get a full return on their investment. The State Engineer complains that no public effort has been made to equip the canal with boats; that no suggestions have come to him from business men and others of the character of machinery to be used in loading and unloading cargoes at the terminals. It is the manifest duty of the New York State Waterways Association to see that this great Barge Canal be made to serve the people for all time and to serve the people only.

New York City has been expending millions of dollars annually on docks and dredging, principally for the benefit of the foreign steamship companies. Congressional investigating committees have demonstrated that our railroads are partners with the foreign steamship companies and that means that a scrutinizing eye should be kept ever alert for railroad encroachment on waterway rights.

Says the Hon. Francis G. Newlands, United States Senator from Nevada:

"During the last half century, the rail carriers have been potent factors in producing confusion of view. Having constructed pioneer railroads hungry for traffic, they sought to paralyze water carriage wherever practicable and have been potential in preventing the expenditure of public moneys in such a way as to promote river transportation. The result has been that though work has been done at various points upon the rivers it has not been in such a comprehensive way as to make the rivers efficient instrumentalities for transportation, and thus maintain or revive river carriage. And so for years navigation has been slowly dying, and on many streams where it once flourished it is now extinct.

"A waterway should be constructed just as a railway is constructed, with terminals, transfer facilities, freight sheds, station houses, and every facility not only for receiving and transferring freight, but for co-ordinating with the railways of the country in such a way as to make our railways and our waterways one system.

"The nation has jurisdiction simply over the use of rivers for navigation. The states have jurisdiction over those rivers for every other purpose. Is it not then practicable to form a working union of the services that relate to water, and to form a working union of the nation with the states, and to frame comprehensive plans that will regard every river with all its sources and tributaries as a unit, and to provide ample funds by the co-operation of the nation and the states so as to develop these rivers for every useful purpose and to prevent every destructiveness of their waters? In this work we must necessarily take into consideration not only the improvement of interstate transportation through highly developed and perfectly constructed waterways but all the beneficial uses of water, and the control of all destructive powers of water in such a way that we may put our flood waters upon our arid lands, withdraw them from our swamp lands, use them for water power and intensive cultivation, and in every way conserve the most valuable national asset, outside of the land itself, that the nation has — its water.

"The national power to aid in all this rests upon the power to regulate commerce by the promotion of river navigation. It must be a real promotion of navigation — not a pretense. If it has this real purpose as its basis, aid and co-operation can be given to these collateral works that assist in accomplishing this purpose. We can thus, by effective co-operation which will bring into union the powers and functions of all the sovereigns affected, both national and state, supplement our splendid railway system by a waterway system that will relieve the former of the burden of carrying cheap and bulky goods and products; and should we add to this later on an effective system of ocean

transportation, we shall have the rail, the river and the ocean carriers all united in developing the commerce of the country. And accompanying this great co-operation in transportation, we shall have the full development of our natural resources in forest and in water in such a way as to increase national production and wealth."

The accomplishment of Senator Newland's project is but a realization of the plans of the founders of this republic for a system of waterways that would forever furnish cargoes for a mighty fleet of merchant ships.

It has long been a recognized economic fact that transportation is the most important element in our civilization. The United States to-day, by reason of its waterways, has an opportunity to give to its people a transportation system surpassing any other in existence. There was a time when American merchant ships were the admiration of the world. The American flag to-day is never seen on a merchantman in foreign waters. This humiliation must be put right up to the door of Congress.

It is in the power of Congress to establish a merchant marine, operating a line of steamships to every port in the world in the name of and for the benefit of the American people. The United States Government is to-day operating two vessels in the building of the Panama Canal. Last year a sailors' strike was declared and the crews of those ships quit work. The Navy Department promptly manned the ships with enlisted men and the sailings of the ships were not interrupted. If the government can do this in the case of two ships, it can do it with two hundred.

The testimony taken before the House Committee on Merchant Marine and Fisheries demonstrates that the manufacturers and producers of the United States have not adequate transportation for their commodities. It should be borne in mind that because of an apparent emergency by reason of lack of transcontinental transportation, the United States Government built the original Pacific railroad. Surely there is to-day an emergency in trans-oceanic transportation and the United States should meet it by supplying the ships as they did in the past by supplying the overland rails for the Pacific railroad.

As a preliminary measure, Congress can empower the President of the United States, with the concurrence of the Secretary of the Navy and of the Secretary of Commerce and Labor, to detail or assign transports or other suitable vessels of the United States to perform the work of transporting with regularity all passengers and freight over fixed routes to be designated between ports of this country and such other countries as may be determined upon, under agreements with the countries to which such routes extend. As we are now paying more than \$350,000,000 a year to foreign nations for carrying American merchandise, the nation can well afford to equip its own ships, and keep this vast sum in the country.

Such a transportation system would compel the nations of the earth to enter into real reciprocal agreements with the United States and bring about an international relation that would eventually realize the dreams of philosophers, to wit, peace among all nations.

A step such as this by the Congress of the United States would cause all to realize that ours is a government of the people. We have in operation postal savings banks and the parcel post. These institutions are conceded to be mighty forces for national peace. A national merchant marine would be the third and final force. Its creation would disturb no vested interest. Its operation would so change the ebb and flow of money as to effect a change for the direct benefit of the people in our monetary system that would forever prevent the concentration of great wealth in the hands of a few men.

History tells us that the so-called American Revolution of 1776 was actually in its inception, a conservative movement intended primarily to protect the rights of the individual American colonist. That this just demand resulted in the creation of a separate nation was due solely to the stubborn injustice of the governing power of that day which refused to see that it could best benefit itself by treating the colonists fairly. The establishment of a national merchant marine would give employment to not only all the men in

the present navy, but to thousands of citizens who would gladly follow the sea in a merchant ship, when they would not enlist for service as naval sailors. It would save the people of the country billions of dollars, reduce taxes and create an unprecedented era of national prosperity.

Such a national merchant marine would herald throughout the world the message of fair dealing for all mankind. Its influence would not be confined to the United States, but would carry across the seas to every port, and cause all men to look up and realize that each individual is a factor in the world's work and shares equally in the benefits of world commerce.

All the nations of the earth have contributed to the formation of the United States and are destined to share in its work. Here these many forces have converged and out of the strife has arisen a nation which has an opportunity to place the capstone of justice and peace upon the world's civilization. It must not be overlooked that the effectiveness of social forces in the evolution of national development depends largely on their extent and permanency. For two hundred and fifty years this country has enjoyed the Christian ideals implanted by the English and French colonists, and because of that fact we can absorb what is good in the new socialism and reject the evil.

Prior to the adoption of the Constitution of the United States our states regulated their own commerce as if each were a separate nation, the power of the Federal Government being merely suggestive. There was no uniformity in the legislation. There was bitter antagonism, each state endeavoring to enact laws intended to cripple the commerce of other states. The Supreme Court in a series of judicial decisions from 1824 to 1884 established an apparent understanding between the Federal and state governments in the regulation of rivers and harbors.

The states therefore have entrusted to Congress the duty of regulating interstate and international commerce. It is a duty that no member of Congress can shirk without being false to the people. The investigation of the so-called shipping combine by the Committee on Merchant Marine and Fisheries of the House of Representatives shows a condition of affairs that calls for immediate action if we are to rescue our commerce from the grasp of foreign nations.

The activity of British commercial interests in Canada bids the United States to be up and doing if it would retain commercial supremacy within its own borders.

Members of the New York State Waterways Association, to you is due the honor for this great New York State Barge Canal. To you has come the opportunity of linking the nation in your work. The party now in power has pledged itself unanimously for waterway development. The National Democratic platform adopted at Baltimore, July 2, 1912, declares:

"We favor the co-operation of the United States and the respective states in plans for the comprehensive treatment of all waterways with a view of co-ordinating plans for channel improvements with plans for drainage of swamp and overflowed lands, and to this end we favor the appropriation by the Federal government of sufficient funds to make surveys of such lands, to develop plans for draining such lands and to supervise the work of construction.

"We favor the adoption of a liberal and comprehensive plan for the development and improvement of our inland waterways with economy and efficiency, so as to permit their navigation by vessels of standard draft."

It is your duty to see to it that that pledge is kept. Your accomplishment in the past has been great and that is an assurance that your work in the future will be greater. A national chain of navigable waterways bearing cargoes to the ships of a national merchant marine will make our people the most prosperous nation that ever inhabited the earth. It will also make us the most peaceful nation and by reason of our pre-eminence in commerce we will be enabled to compel peace throughout the world.

PRESIDENT HILL: Your attention has been called to "Waterways and Commerce." It is the official organ of this Association. We hope you will not forget the splendid work it is doing in the line of publicity and the presenta-

tion of questions of great importance not only to the State but to the nation. We are very glad to hear from the editor and publisher of that worthy journal.

I will say that the luncheon has been postponed for a few minutes, so you are not going to lose it. We are going to have one more paper, which is very short, before we adjourn. I take great pleasure in presenting to you now one of our staunch waterway friends, who will speak on "The Interest of Northern New York in Water Storage," who has been identified with the work of this Association for two years or more, who has given a great deal of time to the matter which he will speak upon, and whom you will be delighted to hear. I take pleasure in presenting to you Mr. Edward North Smith of Watertown. (Applause.)

NORTHERN NEW YORK AND WATER STORAGE.

MR. SMITH: Mr. President and Gentlemen of the State Waterways Association, and Ladies: Coming from the north country, I am glad of this opportunity to give you a message from a territory full of resources little appreciated and little understood, I believe, on the part of the state as a whole. But I regret that any message which I may have to give will have to be abbreviated by reason of the shortness of time and by the reasonable requirements of an established appetite.

No question more vital to the general welfare or to the industrial development and commercial supremacy of the Empire State has in my judgment been presented to the consideration of the voters than the proposed amendment to the State Constitution, popularly known as the Burd amendment and to be voted on at the coming election as amendment No. 4. This amendment paves the way for water storage, for no comprehensive system of water storage can be adopted nor can water storage be of any great value to the state as a whole until the present prohibition of the State Constitution against the use of lands in the forest preserve be modified.

Wherever civilization has developed in territories theretofore covered with forests, freshets in the spring and drouths in the summer have necessarily followed. The clearing up of forest lands to make way for agriculture, the necessarily rapid drainage of agricultural lands, the building up of municipalities covering large areas and calling for rapid drainage of surrounding territory—these are the causes of irregularity in the flow of streams. New York State has been no exception to this rule. All over this state are evidences of small streams entirely dried up in the summer on which in times past were power developments used for grinding grain and running manufacturing plants, but which are now abandoned. This condition is due to the fact that as the forests have been removed the natural storage of water afforded by them has been destroyed.

Man's answer to the problem presented by this condition is that through reservoir storage he can do by artificial means what nature has done by the forest covering. Water storage is no experiment; it is extensively practised by the government of the United States for irrigation in the West and in aid of navigation on the Panama Canal and by the State of Wisconsin for power development and in aid of navigation, and by the State of New York to a very moderate degree in the regulation of the flow of streams and for canal purposes. It is effective and beneficial, but as a general rule, can only be provided through governmental agencies.

There are four purposes to be served by water storage: Municipal water supply, navigation, power development and irrigation. In the State of New York irrigation at the present time is a matter of little or no consideration, and we are therefore only concerned with the three other purposes of water storage.

You have asked me to address my remarks to the subject, "The Interest of Northern New York in Water Storage." Northern New York has no interests in water storage which are not linked with the general welfare and prosperity of the people of the whole state. The development of the science

of electricity and the ability to transmit power by wire has made water power heretofore localized capable of distribution over large areas, so that powers formerly useless can now be made available by electrical transmission at long distances from the source of development. The active interest of Northern New York in water storage grows out of the fact that within its bounds are the great reserves of water power within the state of New York.

That portion of the state which is known as Northern New York constitutes 37 per cent. of the total area of the state. Within that area is between 80 per cent. and 90 per cent. of the present water power development of the state, excluding from consideration the developments on the Niagara and St. Lawrence Rivers. According to the last official reports there are about 580,000 horsepower developed on the rivers within the limits of this state, and on these rivers there are capable of development 1,500,000 horsepower. This I believe to be a conservative estimate. About 460,000 of the horsepower at present developed and about 1,200,000 of the horsepower capable of being developed within the state are upon rivers having their headwaters within the forest preserve. There are the Oswegatchie, the Grasse, the St. Regis, the Racquette and the Salmon rivers which flow northward into the St. Lawrence; the Black with its tributaries, the Beaver and the Moose, which flow westward into Lake Ontario; the Saranac which flows eastward into Lake Champlain; the Mohawk and its tributaries which flows eastward into the Hudson, and the upper Hudson and its tributaries which flows southward to the Atlantic.

Water power depends upon the volume of water together with the fall or head. Each of these rivers or their tributaries have a fall from their head waters to the levels of the waters into which they empty of between 1,000 and 1,400 feet in relatively small distances. The other rivers of the state, the Delaware, the Susquehanna, the Genesee (except at Rochester and Portage) and the Oswego (except at Fulton and Oswego) are relative sluggish streams running through flat territories and, therefore, although having large watersheds, afford relatively little opportunity for the development of extensive power. The great head available in Northern New York is the reason why such a large proportion of the water power developed and capable of being developed within the state is found within the region known as Northern New York.

At the present time the experience on these rivers is that in the spring they become torrents while in the summer little or no water flows in them. No adequate statistics of flood damage has been preserved in this state, but it is known that this damage mounts up into the millions of dollars, varying in amount according to the character of each spring season. As the forests are denuded by lumbering operations the tendency is for freshet conditions to grow worse as time goes on and each year the resultant damage proves more excessive. This is evidenced particularly along the course of the Mohawk and the conditions at Albany have become well-nigh intolerable. Not only is there this flood damage but there also results a tremendous waste of energy, so that in the summer scarcely any water flows in the rivers to operate the power developments and industry is in enforced idleness.

I am particularly familiar with the conditions upon the Black River and these may be fairly used as an illustration for all rivers where power is developed. The average flow of Black River throughout the year is about 3,700 cubic feet of water per second; for years in the spring there have been rushing down its channel over 30,000 cubic feet of water per second and the amount has been steadily increasing until last spring it reached the highest figure ever known — 60,000 cubic feet of water per second.

Now, it is generally known that upon the average there is just so much rainfall in a given territory; the rainfall for Northern New York is estimated at 48 inches per year. This water is stored up in the winter time in the form of snow and ice and with the melting thereof in the spring it passes away all at once, making impossible during the freshet period the utilization of power plants and leaving little or no water to flow in the river during the summer season. This year on Black River the flow fell as low as 100 cubic feet of water per second, and what is true of the Black is also true to a greater or less degree of all the rivers within the state.

Our mills and factories, in so far as they are dependent upon water power, are obliged to shut down or operate on shortened time for a least one-third of the year, and owing to the continuous cutting of timber, the periods of shortage of water are each year growing longer.

It is perfectly apparent that there can be no general industrial development in the state of New York dependent upon water power unless that power can be made continuous. At the present time in Northern New York the greatest industry is the paper industry, which alone can operate to any advantage under an intermittent flow of water and with an irregular power. The reason for this is that in the manufacture of paper water power is used principally for the purpose of making ground wood pulp; paper mills proper are necessarily operated by steam. By putting in extra grinders it is possible for this industry to take advantage of the period of high water and to store up ground wood pulp to tide over the period of drouth. This is only generally true however, for the reason that many paper mills are unable to maintain ground wood mills adequate to their requirements and as a consequence vast quantities of ground wood have to be imported from Canada to keep such mills in operation.

It takes about 300 horsepower to operate a pulp grinder and each grinder gives employment to only two men; it is therefore true that the greatest natural resource in the state of New York, to wit, its water power, is still being put to the crudest possible use. The time is not far distant when even this industry must disappear from the State of New York, provided the wanton, wasteful, unscientific and selfish methods of lumbering which have been pursued up to the present time are continued or permitted to continue, because the wood supply will soon be exhausted. With the departure of the paper industry unless there be a regulation of the flow of our rivers by water storage, the vast resources in water power will prove of relatively little value.

I have shown that within this state we have developed by water about 580,000 horsepower and that we may develop 1,500,000 horsepower. In all of the New England States there are developed 626,000 horsepower, undeveloped 171,000 horsepower, a total possible development of 797,000 horsepower, so that within the state of New York, excluding the Niagara and St. Lawrence Rivers, we have already developed nearly as much horsepower as in all New England and are capable of developing twice as much horsepower.

Assumed that under a proper industrial development each horsepower would give employment to two men, and this is a moderate estimate, we have here the possible creation, under the proper regulation of the flow of our streams, of industries which at this rate would employ 3,000,000 men and support a population of 12,000,000 people; and yet without water storage this vast resource is being wasted and must in time, if present conditions continue, become of little practical value.

During the last twelve years the subject of water storage has been receiving consideration by the authorities at Albany and valuable data upon the subject of the available water supply of the state has been compiled and published by the State Water Supply Commission, but the discussion of water storage has until now been largely academic, for at the present time any water storage measure could only apply to about 20 per cent. of the available water power within the state, for the reason that the prohibitions of section seven of the State Constitution prevent the construction of storage reservoirs upon the lands of the state within the forest preserve.

This section provides: "The lands constituting the forest preserve shall be forever kept as wild forest land. They shall not be leased, sold or exchanged, or be taken by any corporation, public or private, nor shall the timber thereon be sold, removed or destroyed."

It so happens that all of the reservoir sites which are available for the adequate storage of water on the rivers having their head waters in the forest preserve require the flooding of a small proportion of state lands. Accurate surveys of these reservoir sites have been made and are available. These surveys show that of the 1,600,000 acres of land owned by this state within the forest preserve, less than 3 per cent., or about 46,000 acres, will be required

for all the storage reservoirs which it will ever be necessary to construct to regulate the flow of all these rivers; of these 46,000 acres, 75 per cent. are swamp lands or bogs which will be converted by water storage into artificial lakes instead of being as now breeding places for mosquitos; 10 per cent. are lands which have been burned over, 10 per cent. are lands which have been lumbered, 2 per cent. are lands under cultivation and only 3 per cent. are virgin forest lands; so that the construction of all the reservoirs which will be required for generations to come will not only do no damage to the forest preserve as such but will actually prove an improvement to the Adirondack park.

Section 7 of article 7 of the State Constitution was incorporated into the Constitution at the instance of the New York Board of Trade and Transportation and of the Association for the Preservation of the Adirondacks. One of its main purposes was that the state forests might be preserved to act as a natural storage of water, so that navigation on the Hudson might be maintained in the summer months. Since the adoption of this provision the cutting of timber on private land within the Adirondack park has continued and as a consequence freshet and drouth conditions have steadily become more serious.

Amendment No. 4, to be voted upon by the people at the coming election, provides for the use of "not exceeding three per centum of such lands for the construction and maintenance of reservoirs for municipal water supply, for the canals of the state and to regulate the flow of streams." Such reservoirs are to be constructed, owned and controlled by the state, the expense thereof to be apportioned on public and private property and municipalities benefited in proportion to benefits received, and a charge shall be made upon the property and municipalities benefited for a reasonable return to the state upon the value of the rights and property of the state used and services of the state rendered, which charge shall be readjustable at the end of any ten year term. The original wording of section 7 of article 7 remained unchanged by this amendment, which is added to the original provision.

It is interesting to note that the most active forces favoring the adoption of this amendment are the very ones which caused the adoption in the Constitution of 1894 of section 7 of article 7 thereof. This amendment has been carefully considered. Every interest of the state is properly safeguarded. The amendment has passed two legislatures by almost unanimous vote and goes to the electorate for approval or disapproval on November 4, next.

It has been indorsed by the New York Board of Trade and Transportation, by the New York State Waterways Association, by the Association for the Preservation of the Adirondacks, by the State Federation of Labor, by the executive committee of the state grange, by the Northern New York Development League—an organization made up from the representatives from the chambers of commerce and boards of trade of all the counties in Northern New York—by the Albany Chamber of Commerce, the Buffalo Chamber of Commerce, the Rochester Chamber of Commerce, the Syracuse Chamber of Commerce, the New York Chamber of Commerce and the Watertown Chamber of Commerce.

What are some of the benefits to be derived from water storage? The three purposes stated in the proposed amendment are that the reservoirs are to be constructed for municipal water supply, for the canals of the state and to regulate the flow of streams.

First, as to municipal water supply. I have not had the time to make a thorough investigation of the relation of this amendment to municipal water supply, but I do know that many villages and cities in Northern New York derive their municipal water supply from these rivers and that these water supplies are seriously affected by the condition of water during the spring freshet and again during the low water of summer. This, I know, is true as to the city of Watertown, in which I live. The tax upon our filtration plant during flood periods and during the dry months of summer is very severe and the water at such periods, even after filtration, is to say the least not pleasant to the taste. It is familiar that the City of New York was embarrassed in getting its water supply in the Catskills by the fact that a few acres of state

land were involved, and it has been compelled to go to great and unnecessary expense in order to prevent the flooding of these few acres. The time is not far distant when New York and other cities of the state will be compelled to go directly to the Adirondacks for a pure water supply, so that in this regard the proposed amendment is wise.

Second, as to the canals. Not being an authority upon the subject of canals, I will let others speak. Frank S. Gardner, secretary of the New York Board of Trade and Transportation, says: "The Barge Canal system will be provided with such water supply without storage upon state lands for the amount of freight which it has been estimated the canals will carry."

If, however, the estimate should be exceeded and the lockages increased, a larger water supply would be needed. A wise foresight in regard to the possible needs of the canals calls for the approval of "constitutional amendment No. 4." This is certainly a conservative statement, and I do not wish to take issue with it, but will quote from the opinion of Hon. George Clinton of Buffalo, whose name has ever been connected with canal questions in the state. He says: "It is not generally recognized that there is a constant and very great loss of water in the canals caused by evaporation, percolation, leakage and the use of locks, nor is generally recognized the very great loss occasioned by these causes. The Erie Canal from Buffalo to the eastern end of Oneida Lake has ample water supplies and the summit level from the Oneida Lake to the Mohawk will have to be supplied with water by artificial means. The Rome level, so-called, will be taken care of by the storage reservoirs at Delta and Hinkley. The supply of water from the south of the canal from Rome easterly is utterly inadequate for canal purposes and we must look to the watersheds north. It goes without saying, therefore, that the state should as speedily as possible put itself in a position by removing the constitutional obstruction to the placing of reservoirs in the Adirondack region to enable it to secure by conservation a supply which will be undoubtedly adequate for the present needs and possibly for the future needs of Erie Canal, especially as at the same time it may assume a position which will enable it equitably and justly upon receipt of proper compensation to care for the water supply of municipalities in the northern part of the state and to foster its industries."

To those who are familiar with the subject it has been known for a great many years that the Erie Canal was each day drawing from Black River more water than it was entitled to draw under existing arrangements, and was therefore unlawfully diverting water from the Black River which otherwise would have supplied the industries along the line of this river. In the past the state has made some effort by constructing storage reservoirs to compensate Black River for this loss, but up to this time has not fully done so.

Third, to regulate the flow of streams. The purpose of this provision is twofold; to prevent the damage from floods in the spring and to give an even flow to the rivers so that there may be developed upon them a continuous water power.

It is perfectly apparent that with an intermittent and irregular flow of water in our power rivers it is impossible to enter upon any power development which will provide for general industries. No manufacturing industry which employs a large amount of labor, and is dependent upon power, will start with an intermittent water power or with a water power which is unreliable for over one-third of the year, nor will it start provided it has to erect an auxiliary steam plant to furnish power for its industry during four or five months of the year. The expense of the double power development makes such a proposition prohibitive. It follows, therefore, that if there is to be any general industrial development based upon the water power resources of the state, the streams and rivers must be regulated in their flow so that power may be practically continuous.

As it is now throughout the state in industries dependent upon water power many men are thrown out of employment during the dry season and the loss to labor is very severe. In my judgment unless there be a regulation

of the flow of our streams our civilization and development in Northern New York will be retarded and there will be no hope of further progress in manufacturing lines.

Using the data furnished by the conservation congress of the United States, the development of 1,500,000 horsepower within this state would be equivalent to the power which would be developed by the consumption of over 22,000,000 tons of coal per annum.

The development of new industries to provide employment for our citizens means the creation of new homes, new centers of population, the increase of taxable property, so that the state itself as a whole receives indirect benefit from water storage entirely out of proportion to any effort which it will be called upon to expend in the development of such a system. Water storage makes possible increased prosperity and consequent happiness to our people. If we are true to our obligations as citizens it is our duty to develop the natural resources which the Creator of all has placed in our charge.

In order, then, to preserve the industries which we now have, to provide inducements for the development of new industries, to protect the health, safety and property of our citizens, to adequately supply the canals of the state with water, to insure the prosperity and commercial supremacy of the Empire State, a complete system of water storage should be adopted at the earliest possible moment. To the end that the rights of the state and its citizens may be safeguarded, that no provision may be incorporated in the plan which will retard industrial development or place impossible restraints upon industrial activity, all commercial bodies of the state should study this subject and be prepared to express their views upon this vital question. The subject should be approached with no narrow spirit, but after a thorough study of the practical questions involved and the relation of the subject to our commercial and social development as a people. The first step to be taken and without which there can be no water storage worthy of the name, is the adoption of amendment No. 4 by the people at the coming election. This amendment should receive the support of every business man, of every employee, of every manufacturer and of every farmer within the state, because it opens the way for commercial development in the benefits of which each and all will share.

PRESIDENT HILL: We are greatly obliged to Mr. Smith for his excellent paper and the presentation of this important question which is now foreshadowed in part in proposed amendment No. 4 to the Constitution. Gentlemen, before we adjourn I desire to recognize Mr. Roche.

WILLIAM J. ROCHE: Mr. Chairman: The impression has been created upon the part of some members from a newspaper article appearing in the Troy papers of this morning that something unfriendly and discriminatory to Troy was contemplated by the Committee on Resolutions in the resolutions which that committee are framing for presentation to this Convention.

It would be very unjust to this body and very unjust to the committee if such an impression should be allowed to prevail, and the men from Troy are the first to seek to remove it and desire that I should so state to this Convention. Troy was amply represented on the three sub-committees of the Committee on Resolutions. For some reason or another the members of the committee from Troy were not present at the afternoon session of the committee, and there were then presented, as I understand it, some resolutions referring to certain places by name, to the effect that the projects which had been authorized in those places in Congress should be continued and adequate appropriations made for them.

Troy was not mentioned among those places and when it came towards the last portion of the afternoon session, our friend, Mr. McKinney of Albany, with true neighborliness, suggested that the matter be held over to the evening session to hear from the men of Troy, so anything that they desired to present in that respect could be presented. Now, that was done. The committee met at 9 o'clock in the evening and there was then and there present an adequate representation of the Troy men; in fact, I think all of the men from Troy who are members of the committee were present. We asked for the insertion

of the words "and improved harbor at Troy" in the resolutions and also suggested another amendment recognizing the city of Troy and the existing conditions.

Both of our suggestions were unanimously adopted by the committee, so that, as I say, it would be unjust to create in this community or in the city of Troy any impression that there was any action contemplated by the representative committee of this body which was unfriendly to our city or to our neighborhood. This body has always been very true to Troy and to our vicinity and to our interests, and our loyalty to this Association is very, very deep. It is not measured by any limit whatsoever, and we feel that it is just to this Association and to its membership that our locality should not be considered and that our members here should not be considered, as entertaining any suspicion whatever as to the loyalty and the friendship of this Association for our city. (Applause.)

PRESIDENT HILL: Judge Roche, we greatly appreciate your statement and I can assure you that, so far as the executive officers are concerned, they are as heartily in accord with any reasonable suggestions that the city of Troy may make as are your own members of the several committees. I want to say, further, that that is true with reference to all other sections of the state. There is no disposition to discriminate against any locality. This is a state-wide association that seeks to serve the interests of all the people so far as we are concerned, and we hope to continue so to do as long as we continue in our present positions.

It is perhaps unknown to some of the newer members of this Association that in its earlier stages, at the time of its formation, it was necessary to look about the state to find some gentleman who had faith enough in this Association to assume the duties of its presidency for the first year. That gentleman is before us to-day and I have insisted on having him permit me to present him for just a word to you because I know you will appreciate a man who can inaugurate a movement which has resulted in an association of this strength, and you will be glad to hear from him, and I take pleasure in presenting to you now, Robert M. MacFarland of New York City. (Applause.)

MR. MacFARLAND: Mr. Chairman: I am delighted to have the privilege of being with you to-day, and also to bring to you the greetings of the Manufacturers' Association of New York, who were at the birth of this organization and still are members of this organization.

I heartily endorse all the work that has been done by this Association during the past year. Your President while in the Senate worked hard for the waterways of this State, and continues to work hard, and I congratulate him upon the strong organization this has become.

As a last word, I might say that it is my hope that you will persuade Senator Hill to remain as President for another year, owing to the important work he has done. I thank you. (Applause.)

PRESIDENT HILL: We will have just a word more from our Secretary, who has an invitation to present to us, and then we will take a recess.

SECRETARY ELLSWORTH: Mr. President and Members of the Association: I have two letters which I will read.

THE ROCHESTER CHAMBER OF COMMERCE.

October 22, 1913.

HON. HENRY W. HILL, *President, New York State Waterways Association,
In Session, Albany, N. Y.:*

DEAR SIR.—The Rochester Chamber of Commerce takes pleasure in extending a most cordial invitation to the New York State Waterways Association to hold your 1914 Convention in our beautiful city.

Rochester has unusual facilities as a convention city, chief among which is a convention hall, within easy access of the hotel and shopping district; also the large annex which is available for conventions having working exhibits. These are at your disposal, free of charge.

Our hotels are adequate in every respect, ranging from the modest priced and comfortable hostelry to the most palatial.

Rochester is within a night's ride of New York by rail; two and one-half hours' ride from Niagara Falls, and within a half-day's ride of the Thousand Islands by boat. We have ten miles of lake summer resorts; the parks of Rochester are numerous and so varied in their points of beauty that they have become famous over the world. From June to October the "Flower City" is in the height of her floral beauty and charm.

The Chamber is glad at all times to do anything within its power to assist any local committee or organization in securing a convention for Rochester, but under action of the board of trustees its power then ceases.

Mayor Edgerton has kindly stated that he will supplement this invitation with one from himself as the city's chief executive, in the hope that you may be impressed with the earnestness of our invitation.

Yours most cordially,

ROCHESTER CHAMBER OF COMMERCE.

R. M. SEARLE, *President.*

ROLAND B. WOODWARD, *Secretary.*

OFFICE OF THE MAYOR

ROCHESTER, N. Y., October 24, 1913.

HON. HENRY W. HILL, *President, New York State Waterways Association,
In Session, Albany, N. Y.:*

MY DEAR SIR.—On behalf of the citizens of Rochester, I take pleasure in extending to you a most sincere and cordial invitation to hold your next convention in this city. Our convention hall, seating four thousand—and so arranged that it can take excellent care of smaller audiences—is at your disposal free of cost.

Our several new hotels, together with our other first class hostelries, offer you service, accommodations and cuisine equal to that of any city in the country. And, what is more to the point, their rates are low.

Rochester is exceptionally well located for conventions, being half way between Boston and Chicago, and easier of access to fifty million people than any other city in America. We will take good care of you, will show you sixteen hundred acres of magnificent parks, will give you an opportunity to cruise up the Genesee River, or to take delightful little side trips to Niagara Falls or to the Thousand Islands.

Let us demonstrate to you, personally, why the "Rochester Spirit" is becoming well known all over the country. Come to Rochester next time and let your convention be a vacation as well.

Cordially yours,

HIRAM H. EDGERTON,

Mayor.

BERNARD J. HAGGARTY,

Secretary to the Mayor.

JAMES T. HUTCHINGS (Rochester): Mr. Chairman: I want to say that you will remember when we were in Buffalo two years ago, Watertown gave us a very cordial invitation to come to Watertown. We had also an invitation from Rochester to come there but we very gracefully—and I am happy to say we were glad that we did—deferred to Watertown, and went to Watertown where we had a most delightful convention. While in Watertown you were invited to come to Albany and, due to the great interest in waterways centered in and about Albany, it was thought best to come here. Now, gentlemen, I want personally, representing the city and as a member of the Chamber of Commerce—I want you to come to Rochester and help us be more interested in your projects and let us help you. (Applause.)

FRANK S. OAKES (Cattaraugus): I move that this organization accept the cordial invitation that has been given to us to meet next year for our annual convention in the city of Rochester. From my personal acquaintance with the city, I know that there is no place where we could go to be better entertained than in the city of Rochester, one of our beautiful inland cities. I move the acceptance of the invitation.

MR. KILLMER (Brooklyn): I most heartily second the motion.

MR. HADLEY (Plattsburgh): I rise to second the motion offered as to the very kind invitation of Rochester for the convention next year and I wish to serve notice on the convention now that Plattsburgh on Lake Champlain will invite the convention next year to meet there in 1915 when the Champlain Canal will be open.

MR. TUTTLE (Buffalo): Buffalo has been called a suburb of the city which extends the invitation, although we think the suburb is the other way. The Buffalonians will be glad to accept, and not only will we come down and help boost for Rochester—they are a boosting town—but we will show them some new tricks.

WILLIAM A. CLARK (Constantia): It is not generally known that I am all over the country investigating waterways. I rise to second the motion to have the convention meet next year in the city of Rochester. That happens to be my home city and I am going to give you a little illustration of my brother-in-law, who never could say anything right. He said he was born in the garden of the West—Rochester. I said to him, "No, sir; you were born in the garden of the world." I second the motion to hold the convention in Rochester, the garden of the world.

MARSHALL L. BARNES (President, Chamber of Commerce, Troy): I have had the pleasure of attending many conventions in the city of Rochester. It is a most hospitable city and one that can well take care of any convention, and in behalf of the Troy Chamber of Commerce, I second the motion.

EDWARD N. SMITH (Watertown): Knowing something of the hospitality of the city of Rochester, and particularly of its Chamber of Commerce, I don't feel that this motion will be entirely complete unless Northern New York, which I represent here in part, particularly Watertown, should second it.

EDWARD N. McKINNEY (Albany): Include Albany. I think after seeing the two representatives of the city, we are perfectly satisfied to take the whole city on the basis of the merit of those two representatives.

PRESIDENT HILL: Is there any other section of the state that wants to join in this unanimous approval? I assume that it is practically unanimous. As many as are in favor of accepting the cordial invitation of the Chamber of Commerce of the city of Rochester, which has finally emerged into light, make it manifest by saying aye. Carried. It is unanimously adopted. I know it will be a pleasure for all waterway men to visit the garden city of Western New York.

We will stand adjourned and proceed immediately to the Hotel Ten Eyck, where you are invited as guests of the Albany Chamber of Commerce.

FRIDAY AFTERNOON.

Convention called to order at 3 o'clock by President Hill.

PRESIDENT HILL: Gentlemen of the Convention, before we proceed with the regular calendar, Mrs. Maude Wood Henry, representing the National Rivers and Harbors Congress, who comes with a letter from the secretary, desires to present the claims of that association to you for your consideration.

MRS. HENRY: Mr. Chairman and Members of the Association: I am about to dispel the notion that women talk more than men. I asked Mr. Hill for just one minute in which to present a matter which our secretary, Mr. Thompson, asked me to do while I am in your neighborhood.

That is the matter of our convention in Washington on December 3rd, 4th and 5th. I have a telegram from Mr. Thompson which I received this morning:

"The National Rivers and Harbors Congress of the United States sends cordial greetings to the Waterways Association of the Empire State. New York is building a new barge canal—a work far greater in proportion to the population and resources than the building of the Panama Canal by the United States. But neither the nation nor the states can receive the greatest possible benefit from the standpoint of improvements on their canals until all the waterways of the United States are improved. The New York State Waterways Association will promote the interest both of the Empire State and of the whole United States by becoming affiliated with the National Rivers and Harbors Congress, and by sending a strong delegation to the coming convention, both of which you are most cordially invited to do.

(Signed) "S. A. THOMPSON,
"National Rivers and Harbors Congress."

Mr. Thompson has asked me to urge upon the delegates to this convention the desirability of a strong representation at our convention in December. You know that we have a new political administration to contend with and it is very essential that the policy of annual appropriations for rivers and harbors be continued.

In talking with Mr. Stephen M. Sparkman, chairman of the Rivers and Harbors Committee of Congress, last year at his home in Tampa, Florida, he told me that the National Rivers and Harbors Congress had without question had more influence in securing waterway appropriations for the different sections of the United States than all other factors in the United States combined. Both Mr. Sparkman and his predecessor, Mr. Jackson, have repeatedly stated on the floor of the House in Washington and at our conventions in Washington that it is due to the National Rivers and Harbors Congress that a tardy government has given us at last yearly appropriations for rivers and harbors.

Prior to our organization in 1906 the rivers and harbors bills were what Senator Ramsdell dubbed "The orphan child in the halls of Congress subsisting on the crumbs left over from other appropriations." At that time we were having about \$50,000,000 on an average for all of the waterways of the United States, a very small sum when you consider the 300 harbors and the 25,000 miles of navigable rivers, not to mention the rivers that can be made navigable. The rivers and harbors bills at that time were three years apart, sometimes five years. Since 1907 we have had four annual bills. This year we got more than the \$50,000,000 average our Congress has been asking; with the eight or nine million—I don't know the exact amount—in the sundry civil bill, I believe we had approximately \$59,000,000 for waterways.

We don't know whether we are going to have another bill in 1914 or not; we sincerely hope so. And it is as much the duty of the people of New York State and these eastern states as it is that of the people of the West and South to come to Washington and show your interest and co-operate with the National Rivers and Harbors Congress and help along the great work in which it is engaged.

In my work in the East, which has not been very extensive — a little work last year in Massachusetts, and I have just come to New York State within the last ten days for the first time — I hear a great deal as I go around among the business men about the appropriations which the West and South have had, and I heard your Governor make the statement here yesterday that New York State had had, I believe, \$5,000,000 in the last 100 years, if I am correct. Well, that may be true, but isn't it possible that this section of the country has not been quite so active in proclaiming its rights and working for what it wants as some of the other sections? I have devoted the last thirteen or fourteen years to work in the southern states and I know that the people down there have been working very hard, indeed, for what they have received at the hands of Congress. I don't believe they have gotten any more than they ought to have, or anywhere near as much.

D. E. AINSWORTH (Albany): Our activities have been devoted to paying the money into the treasury.

MRS. HENRY: This is an old and densely populated and rich and prosperous section of the country and the fact that New York State has money to pay for the Barge Canal speaks for itself. Some of the southern states, like Florida or Mississippi, would not have the money to buy a barge canal if they wanted one.

But Mr. Thompson is exceedingly anxious to have me emphasize the desirability for all of the people in this section of the country coming to Washington and taking an active part in our deliberations, and talking for their own interests and working for the Hudson if they like, because we are getting tired of being accused of working for the Mississippi River.

I have just one more thing I wish to say to you. I want to give you a little peep into our program. It is a very small one. I haven't the program for our convention on December 3, 4 and 5, and I should not give it to you if I had, but we want you all to come to Washington, we want you very earnestly, and we want you in larger numbers than ever before, and possibly some of these attractions will pave the way for your acceptance of this invitation.

Mr. Woodrow Wilson will attend our convention. He has already pledged himself to our interests and I think you will be delighted with what he has to say. Secretary of War Garrison is another attraction, and Mr. Thompson — I am just going to read a little off-hand extract from a personal letter to me in which he says:

"We are introducing a new feature at the convention this time, namely, two evening sessions, Wednesday and Thursday nights, the 3rd and 4th of December. The first one is to be ladies' night. Mrs. Sarah Willard Strough, president of the National Women's League, will preside and make an address. We are going to have an illustrated lecture by Mrs. Foster of Chicago. You may remember an article by her in the July number of the magazine. She is to have a number of beautiful and unusual pictures to show. Dr. John Barrett of the Pan-American Union is to give us a lecture and a number of new and fresh pictures of the Panama Canal will be shown by Mr. Wood. There probably will be some moving pictures. We are also considering giving a reception, but that is not settled."

That is, as far as I know, all of the program for the convention, but all of you men who have attended our conventions in Washington in the past, I think, can rest assured that we will provide you with good entertainment this year. I thank you very much for this opportunity to present this matter to you, and I again urge upon you the necessity for coming there in large numbers.

E. W. DOUGLAS (Troy): Mr. President, I ask your indulgence for just a moment. I have had occasion during the past year to become acquainted with the work and business of the National Rivers and Harbors Congress. I am satisfied that it plays no favorites, that its objects are to reach to us as much as to any other section of the country, and that we are entitled to participate in its benefits in common with all other sections, and that the interests of that

association in us and of ours in that depend upon our efforts, and I move that a committee of suitable numbers be appointed by the President of this organization to represent the New York State Waterways Association at the coming convention in December in Washington, and that the President of this Association be chairman of that committee.

Motion seconded.

JUDGE CULLINAN (Oswego): Mr. Douglas, the Committee on Resolutions will present a report which perhaps may not harmonize fully with what you have suggested in your motion and perhaps it might be well for you to suspend your motion temporarily until those resolutions are read.

MR. DOUGLAS: I consent to that.

PRESIDENT HILL: By consent of the introducer and the seconder of the motion, it will be temporarily laid on the table.

Gentlemen of the Convention, I want to make one or two announcements. We hear our friend who has been with us always, Hon. George R. Wilson of Brooklyn, is unavoidably detained and could not be with us at the sessions of this Convention; also Mr. James T. Hoile, secretary of the Manufacturers' Association of the City of New York, I understand, is not well and was unable to be here. Mr. Joseph H. Bailey, of Patchogue, N. Y., sends a letter saying that he was to sail for Havana and he could not be present. We have letters from other gentlemen to the same effect, who were unavoidably detained. We have also a communication from the Fort Edward Commercial Association, saying that they have sent their check for membership in this Association and desire to be enrolled as a member of it.

The first paper this afternoon on the program would have been that of Elwin S. Piper, president of the Allied Boards of Trade of Brooklyn, and when we learned that he could not be here we asked Mr. Nelson B. Killmer, of Brooklyn, to prepare a paper and speak for the city of Brooklyn. I take great pleasure in introducing to you Mr. Killmer, who has been one of our steadfast and strongest friends since the organization of this Association. (Applause.)

WATERWAYS AND NEW YORK HARBOR.

NELSON B. KILLMER (Brooklyn): I want to say, in taking the place of Mr. Piper, that Mr. Piper's interest is not lessened at all in the work of the Waterways Association. Not only Mr. Piper but Mr. Meyer, our second vice-president; Mr. Wilson, who has been referred to by the President; Borough President Connelly of Queens, and others who are usually in attendance at our conventions, have a deep interest in the welfare of this Association and are ready to put forth their best efforts for its entire sphere of action, just as much as though they were here.

I have been asked to prepare an address upon "The Development of Waterways and Their Effect upon the City and Port of New York," with the idea of presenting the matter in such a way as to give the members of this State waterways Association and others who may be influenced thereby, an indication of the future growth of the great metropolis as the result of the construction or non-construction of the waterways that will help to aid her in her progress forward, or in the construction of those which will serve to aid her competitors, and thus impede or prevent that progress so much desired by the people of the whole state.

There are practically two systems of state waterway developments that have a direct bearing upon the question before us for consideration. The first and most important is the complete development of the new enlarged Barge Canal with all of its main lines and branches, either now under construction or as proposed and recommended by the New York State Waterways Association, and which include not only the Erie, Champlain and Oswego Canals, but also the Black River, Chemung, Glens Falls, Harlem and Flushing and Jamaica Bay Canals as well.

The primal object of the people of the Empire State in entering upon an expenditure of more than \$100,000,000 for the improvement of its internal waterway system was the improving and fostering of the commerce of the state, which was to include not only the development of any manner of commerce originating in the state, but was also to include the transporting over its surface all of the productions of the great western and northwestern sections of our continent that could be attracted by its improved facilities and cheap rates in this direction to the seaboard. The additional expenditure of many millions more for terminal facilities was for the same purpose, and to make sure and certain that the first expenditure was not a failure, but which was admitted it would be, without supplementing it with these additional terminal facilities.

If, when completed, the increased commerce comes even far short in amount of the expectations which the friends of the canals believe will be transported over them, even then it will be of sufficient amount to have a stimulating and beneficent effect upon the business interests of every city and hamlet bordering upon any portion of the canals, and must be of great advantage to every one of them; but in a special manner we believe it is destined to be of immense value to the metropolis of this state and nation.

New York City is at the seaboard, and as the point or place of distribution of most of the foreign commerce of the country, either for exporting or importing purposes, has, of course, peculiar advantages not enjoyed by other cities of the state, and must, of necessity, be in a position to secure benefits that they could not expect to enjoy, but which, at the same time, can be utilized to their advantage, both directly and indirectly. It is also the largest manufacturing center of the country and therefore should be the greatest recipient of raw material and the forwarder of the finished product which must find its way to and from the factories, and which will utilize the new waterways to a larger extent than ever before, by reason of the improved, up-to-date facilities and the lower cost of transportation. It is also the center of the largest urban communities. These communities must receive food supplies from the agricultural sections of the country; and, in addition to their own very large consumption of the same, they are distributors to other seacoast cities.

In view, then, of New York City's peculiar location and advantages, what should be the expectations of those who have, in some degree, made a study of the effect of improved waterway facilities? Should they be simply hopeful, or very largely optimistic?

In former days the old Erie Canal's tonnage, even after it was enlarged and made free, never reached a maximum of 5,000,000 tons. Now, with its latest improvements and the up-to-date facilities for navigating, it is expected the maximum will reach 20,000,000 tons annually. This enormous increase should not be deemed a flight of the imagination and unreasonable when we take into consideration the later developments of manufacturing and mining in our own state, and of agricultural, mining and manufacturing industries in the country north and west of us, and which must add greatly to the growth of business in our imperial city. This large amount of traffic is, of course, based upon the supposition that not only will the Erie, Champlain and Oswego Barge Canals be completed, but that the proposed extension of the Black River Canal to the lake, the Chemung Canal to the Pennsylvania coal fields, the Glens Falls feeder, the Harlem Ship Canal, and the Flushing-Jamaica Bay Canals will all be constructed as contemplated, and the large and commodious export terminal created at Jamaica Bay, as provided for in the Barge Canal Terminal referendum bills, so that provision may be made, not only to reach the source of production of the agricultural, mining and manufacturing industries of the country, but also to furnish a proper terminal at tide water to receive and trans-ship the same for either foreign or domestic use.

If New York is to get back her grain trade, and secure, as it should, its rightful share of the large increase of the grains produced in the northwestern sections of our own country and Canada, the proposed extensions to the canal system and the export terminal at Jamaica Bay, are absolutely essential.

Without them there will be no grain trade. As stated by the Barge Canal Terminal Commission, no other location in the port of New York can furnish the necessary facilities, and no other place in the harbor in all that have been provided as terminals under the referendum bill, furnishes any opportunity to care for the grain trade for export, when it is secured. Every terminal in the harbor, selected under the bill, and for which about \$9,500,000 was set apart, simply furnishes terminals that will be needed for the local business peculiar to the several localities selected, and in most cases, because of congestion, and the great demand for shipping facilities in the main harbor that creates enormous values, there will hardly be sufficient room at the various terminals to transact the local domestic business, leaving little for the foreign trade, and absolutely none for the transaction of the grain business in such a modern manner as will make the trans-shipment expeditiously and cheaply and secure its exportation through the port of New York.

The other system of improved waterways which will have a favorable effect upon the greater city's prosperity is more local in its sphere of operation. It consists of a canal or waterway the whole length of Long Island and connecting with New York harbor at Jamaica Bay; the Gravesend and Sheepshead Bay Canal, and the full development of Jamaica Bay. The several bays on the south side of, and extending the whole length of Long Island, offer an easy and practical solution for the construction of a highway or waterway with great possibilities for commercial and recreative purposes. The connecting links between the bays will require the dredging of only a comparatively few miles of sand to make a magnificent water route over 100 miles in length, and would reach from Jamaica Bay on the west, through Great South, Moriches, Shinnecock, Great and Little Peconic Bays, to Long Island Sound on the east. It would greatly advantage the whole of Long Island and bring it in direct touch with the metropolis by the cheapest method of transportation, and be the means of stimulating and building up the agricultural and manufacturing interests of the whole island, and which would also directly benefit the greater city.

This improvement should be a matter of state pride and, while the national government would undoubtedly do its part, the work should be constructed and placed under the canal system of the state. The New York State Waterways Association should take such action as will hasten its construction.

The City of New York has already taken action looking to the construction of a waterway to connect Gravesend and Sheepshead Bays, but only as a drainage canal for sanitary purposes, being but 200 feet wide and some six feet deep. Many think the canal should be 400 feet wide and deep enough for commercial purposes, and this view meets with the approval of the army engineers. If it is constructed upon this plan, then it should be taken over by the state and become part of the canal system of the state. It would be part of the South Side Waterway, and a desirable link in the intra-coastal chain of navigation that is being agitated and now partly constructed from Maine to Florida. It would also be an inside protected waterway for small craft plying between New York and Jamaica Bays. This work should be constructed upon the co-operative plan, in which the national, state and city governments should each do its part. The whole of it lies within the precincts of the greater city and would be of advantage to the latter in many ways.

The question of the development of Jamaica Bay by the national, state and city governments has been one of the subjects considered by this Association at all of its previous meetings. I shall only briefly allude to it on this occasion. Since our last session, the national government has begun the dredging of the entrance channel and the city has dredged the first section of the inner or main channel nearly two miles in length, 500 feet wide and 18 feet deep. It begins at the head of the entrance channel at Barren Island, and extends to the entrance to Mill Basin. The city did the physical work and utilized the material dredged for filling in the low meadows and bay, and has made for itself nearly 300 acres of shore front land by the operation. The national government reimbursed the city for the cost of the dredging, monthly as the work progressed, and has appropriated and has now available over \$465,000 more to reimburse the city as fast as the main channel is constructed.

This, of course, is of great advantage to the city. By the unique plan which was entered into by the two governments, the city is securing channels for the harbor, and at the same time will create hundreds of acres of valuable shore front land, practically without any expense to itself. The city, of course, will be to the expense of constructing basins and docks so as to utilize the channels; but the demand already made for dockage room and for manufacturing opportunities will insure a handsome return for every dollar the city can invest in that locality.

During this summer, in accordance with the legislation secured last winter, a survey was made by the state engineer's office of the route for the Flushing-Jamaica Bay Canal. We have no knowledge of what the survey shows, or the character of the report that will be made concerning it; but we hope this Association will take such action as will hasten its construction and enable the building of the export terminal, as provided for in the referendum bill, at as early a date as possible.

I have discussed the several waterways of the state which, if improved and properly developed, will be the means of attracting such a volume of commerce to the port of New York, both for foreign and domestic use, as was never contemplated before and almost beyond the reach of the imagination. This commercial activity will stimulate and build up such an industrial development in and about the greater city that the present manufacturing industry, as large as it is, will seem trivial in comparison.

Now a few words regarding the waterways that are being improved and developed and which are destined to impede our progress and prevent the marvelous commercial prosperity outlined above.

The first and most formidable competitor for the products of the fields and mines of the West and Northwest is the harbor of Montreal, with its improved, up-to-date terminal appliances, unequaled anywhere on the Atlantic coast. The Canadian authorities are alive to the importance of securing the business of the great northwestern section of our country as well as their own, and have recently authorized the reconstruction of an entire new canal at the Niagara frontier, in place of the present Welland Canal, at an estimated cost of \$45,000,000. The new canal will be of such size that large vessels can pass from Lake Erie to Lake Ontario and on to Montreal without, as at present, breaking bulk and reshipping of cargo at Buffalo. They have determined upon a policy for the completion of a great canal system which, they believe, will enable them to successfully compete for the transit trade of the great western country with the principal markets of the world. In all their plans, they have recognized, as the principal factor, the character of the Montreal terminal, and in every way have endeavored to make it effective and serviceable, with the latest appliances. The facilities they have established there for the reshipment of grain expeditiously and cheaply, have increased that branch of their business enormously in only a few years. Starting with a grain elevator with a capacity of only one million bushels, the business increased so rapidly that in 1909 they planned for another of equal size; but before its completion the designs were changed and they made it with a storage capacity of 2,600,000 bushels. The present capacity of the several grain elevators now in the harbor reaches seven million bushels.

The Harbor Commission has given orders that all future works shall be on an enlarged scale, sufficient to double the present accommodations within a period of twelve years. They say they intend to reduce the handling charges upon every ton of freight coming to that port. They recognize that their efforts mean direct competition with the part of New York, and have stated that the railroads of the United States have been carrying through Buffalo the business which they say ought to have gone through Canadian canals, and that the railroads were able to do it because Canada had then no adequate terminal facilities to take care of the business; but when she had provided them, as she is now rapidly doing at Montreal, she will then control the grain export trade of North America, in spite of the new enlarged New York State Barge Canal, and that Buffalo and New York will be left. Can she do it? It certainly will depend upon the character and the speed with which the export terminal at Jamaica Bay is completed, and the ease with which shipments can reach it through the proposed Harlem and Flushing-Jamaica Bay Canals.

During the past year, the officials of the State of Massachusetts and the city of Boston have been giving their united attention to the development of Boston harbor. Large sums of money have been voted and plans upon an extensive scale made, so that modern facilities may be provided for the greatly increased shipping business that is being constantly secured by them, through ample accommodations and low port charges.

Several steamship lines have left the port of New York and made Boston their headquarters, because of better accommodations and cheaper wharfage rates. Boston has already agitated the question of a free port, where foreign raw materials might be received duty free and manufactured into a finished product and sent out to other countries, giving her residents the benefit of the labor employed necessary for such manufacturing, and in this agitation has come in direct competition with a similar proposition that is being considered by the business interests of New York, who recognize that they have an ideal location at Jamaica Bay for such a free port. Her latest aspirations, however, take the form of a mammoth dry dock, to lure the big ocean liners from the port of New York. Dry docks to meet the requirements of any ship yet built or likely to be built, are an absolute requirement in every port where they call.

For many years past there have been agitations at New York harbor for the construction of a dry dock to meet modern conditions; but they ended in nothing being done. Recently, it has dawned upon owners, insurance people, and ship builders, that they were face to face with new conditions and that something must be done. The fact is that the modern great steamship requires a modern great dry dock, as a factor of safety.

Now Boston steps in and, according to a very recent report, has made a contract with three of the great transatlantic steamship lines, by which it is possible to build a dry dock there, capable of accommodating any steamship now in operation or likely to be built for many years to come. The dock is estimated to cost between four and five million dollars. These steamship lines are the very ones that have given the port of New York the cold shoulder—and this may have far-reaching results. There is no doubt Boston is after more of the transatlantic trade. A large number of the steamships in the Far Eastern trade call there first and discharge part of their cargoes of raw material for the New England industries before coming to New York to finish, and then load outward. Her passenger traffic has increased greatly during the past year.

The principal source of danger to New York from this new Boston activity is the possibility of the great liners going to that port as their terminal port. What can be done to prevent this catastrophe? New York must build a dry dock that will be equal to any demands that might be made upon it. Fortunately, it has an ideal location wherein it could be constructed at probably less cost than anywhere else in the world. That location is at Jamaica Bay.

New Jersey is alive to the importance of developing her commerce, and the city of Newark is now dredging her harbor so as to offer attractive terminal facilities for shipping and secure business that would naturally remain in New York. She uses the very plausible argument that most of the trunk line railroads of the country pass right through her territory and a trans-shipment to vessels lying in her harbor would be made expeditiously and cheaply. An effort has also been made by New Jersey Congressmen to secure the removal of the Brooklyn Navy Yard over to the shores of New Jersey, and the Federal government has already made an investigation of the subject.

Within the past month the New Jersey Harbor Commission has made a report to the Governor of that state relative to the transforming of a large part of their shore line into a harbor. In the report we discover this very remarkable and suggestive language:

“Our neighboring seaports are fully alive to the fact that New York has failed to keep pace with the demand for dock development, and this condition will be greatly accentuated when the increased commerce seeks Atlantic coast ports on the opening of the Panama Canal;” and we might add, also, when the new Barge Canal is completed. It adds that it would be easier for the established lines of trade in New York harbor to transfer their terminals to the New Jersey section than to transfer them to other ports; and it says there is

no question of the enormous advantage New Jersey would gain by the development of a great terminal on the New Jersey side of upper New York Bay.

This is true. New York must push forward to completion as rapidly as possible all the docking facilities it has undertaken, so that she may not be a constant by-word and reproach from other coast cities, because she fails to keep pace with the demand for dockage facilities.

There is one other waterway project that is destined to work an injury to New York harbor, unless she bestirs herself and provides what is needed, but which should really be of great value to her commerce, and that is the Intra-Coastal or Atlantic Deeper Waterways Canal. The greatest activity for that project is at the city of Philadelphia, and among the reasons given the people of New Jersey and Pennsylvania for supporting it is the statement that they will receive the water-borne products of the great West via the Barge Canal. This will undoubtedly prove true; and to what extent it will disadvantage the harbor of New York will depend upon New York's awakening to the dangers that menace her, and provide the necessary facilities of the new Panama Canal, or the completion of the enlarged Barge Canal.

The New York State Waterways Association was organized for the express purpose of securing the necessary waterway improvements and developments needed to properly care for the commercial prosperity of the whole state. This being so, is not the responsibility upon its membership to see that these improvements are speedily provided?

MR. SILLECK (Brooklyn): I don't want this Convention to go home with the idea that New York City is a sleepy town and behind the times. We have located down there the John M. Robbins Dry Dock and Repair Yard, a corporation capitalized at \$10,000,000, and to my certain knowledge for the last five years they have been trying to make connection with the various steamships, that if they would agree to give them a thousand-foot dry dock and a sufficient amount of business annually, they would build that dock. And they are ready to-day, with the Clyde interests behind them, to make that proposition good, but the foreign steamships in New York harbor have for years and years had their docking facilities for a great deal less than cost. They are renting the Chelsea piers at about 2 per cent. of cost.

The State is spending \$140,000,000 to build a Barge Canal; the United States government is spending \$200,000,000 for the Panama Canal, and the larger per cent. of that business will center in New York harbor, and why New York City, or New York City's interests, should sell the dockage privilege to a foreign steamship company at less than cost, in other words, practically subsidizing foreign steamships to come into our great harbor and do its business, we can't understand. New York's foreign commerce is over \$2,000,000,000 annually. The foreign commerce of Boston is inside of \$200,000,000, and the great steamships like the eight or nine hundred foot vessels would have to lay up in Boston three or four weeks to get a cargo and they could get a cargo every twenty-four hours in New York.

But we have live, active business men who are ready to do business the world over and will invest three or four or five or ten million dollars to build docks, but they will not sell that product at less than cost, and I, as a citizen of the City of New York and a taxpayer of the City of New York, do object most decidedly to spending public money and then subsidize foreign steamships which carry freight out and into our great harbor.

PRESIDENT HILL: We are now to have the pleasure of hearing from a member of Congress, representing the Albany district, on the subject of "National Importance of Deepening the Hudson River." I take pleasure in introducing to you the Hon. Peter G. Ten Eyck, of the city of Albany, member of Congress from this district.

NATIONAL IMPORTANCE OF DEEPENING THE HUDSON RIVER.

MR. TEN EYCK: Mr. President and Gentlemen of the New York State Waterways Association: In this short paper which I will read to you this afternoon, I am only going to deal with the general way in which the deepening of the Hudson River will affect the whole nation at large.

It is with the greatest pleasure that I meet with you to-day to consider the important question of deeper waterways in this state.

It is unnecessary for me to mention the wonderful increase in population and production in manufacturing, mining and farming products in this great country of ours, all of which tend to increase the quantity of freight shipped from place to place. We only have to look at the overcrowded conditions of the railroads to show that this is no idle dream.

Agitation as regards the high cost of living has spread throughout the country, and there is nothing so closely identified with the high cost of living as the cost of transportation, whether it be by railway, waterway, or highway.

I am not going to take much of your time, but I do wish to say a few words relating to the "national importance of the deepening of the Hudson River."

The great State of New York contributes at least one-tenth of the entire revenue of the government, and therefor should be considered liberally in all things relating to government aid.

The Hudson River serves more of the population in the state than any other waterway adjacent to its borders. I do not hesitate to say that it will, when the Barge Canal is completed, carry more traffic than the Panama Canal. Therefore it should be given due consideration, and all the people throughout the state and nation ought to do everything in their power to secure the help of the government towards its improvement.

Nothing can be gained for New York City without being beneficial to the Capital District; no improvement to the Capital District can be made without a beneficial effect upon Buffalo, Rochester, Syracuse, and New York City; no improvement can be made in Buffalo without in turn helping Rochester and our twin cities, Albany and Troy, and the surrounding territory; no scheme of this class can benefit New York State without having an equally beneficial effect upon the whole nation at large.

I take this opportunity to urge upon you gentlemen assembled here to-day, representing all the different localities in the Empire State, to agree to work as one body for the betterment of our waterways throughout our entire state. You may be interested in one scheme, I in another, but if we wish to be successful we must combine the two old sayings, "Help ye one another" and "Live and let live."

My visit this summer to the Canal Zone, Isthmus of Panama, to inspect that wonderful engineering project which affects the entire world more than any other one thing at the present time, convinces me that our project in relation to deepening the Hudson River is correct and sound. I beg to prophesy that within a very few years you will see grow at one of the terminals of the Panama Canal a large city, which will rival our seaport towns, and it will be at this city that cargoes from all over the world will be redistributed and shipped by water to this country, and the Capital District should prepare itself in advance to have its due proportion of this trade.

The Hudson River watershed belongs to and is a part of the greatest combination of inland and ocean waterways in the world, commencing with the Great Lakes, through the Barge Canal, the Hudson River, the Atlantic Ocean, the Gulf of Mexico, and the Panama Canal, all of which connect the interior states and cities by water route with our Pacific slope, serving over three-quarters of the population of the United States.

My subject to-day relates to the effect that the deepening of the Hudson River will have on the nation at large, and in describing this I will outline in a few short paragraphs some of the reasons why the deepening of the Hudson River appeals to me from a transportation and an engineering standpoint and how it relates both to the state and nation.

First. The lengthening of all water routes and the shortening of rail routes tends to lower the freight rates.

Second. In this particular case we have a congested condition of the railroads paralleling the Hudson River between New York and Albany.

Third. This congestion will increase materially when the Panama Canal is completed and put into operation.

Fourth. The remedy is simple, because the Hudson is a navigable stream to Waterford, and is under the jurisdiction of the United States government.

Fifth. The transportation facilities of the Capital District terminal is of no mean nature, as six important railroads either terminate or pass through it, not to mention the Barge Canal and the Lake Champlain Canal which terminate in it.

Sixth. The navigable part of the river is an arm of the sea, extending approximately 150 miles inland from New York City to Troy.

Seventh. At lowest low water the river at Troy is only approximately one and one-half feet above sea level; therefore no locks will be needed between New York and Troy.

Eighth. Its depth is thirty feet or more between New York and Hudson, the distance of which is approximately 120 miles, therefore leaving only approximately 30 miles to be deepened to secure the use of 150 miles of waterway.

Ninth. The shallowest place between Hudson and Troy is approximately eight and one-half feet, and this is now being deepened to twelve feet to correspond to the depth of the Barge Canal. But it is already conceded by the engineers that twelve feet is not deep enough for the present style of steamer which now navigates the Hudson as far as Troy; the present steamers need at least a fourteen or fifteen foot channel.

Tenth. Every state interested in the intercoastal canal system should be interested in the deepening of the Hudson, as there is no other feeder of as much importance to the intercoastal trade on account of the freight that it will receive through the Barge Canal via the Hudson River.

Eleventh. Appropriations have been made by Congress and money is now being expended and work under way to deepen the channel to twelve feet between Hudson and Troy.

Twelfth. The commercial importance of this Capital District can readily be understood when it is stated that within a radius of 15 miles we have the most thickly populated district outside of New York and Buffalo in the great State of New York. Within a circle with a radius of 200 miles encircling the Capital District there is a population of 25,000,000 people.

Thirteenth. It is very important that the producing and consuming population of the Pacific coast should come in the closest touch with the producing and consuming population of the Middle States and those states bordering on the watersheds of the Great Lakes, and all of these should be brought in close touch with the consuming population of South America.

Fourteenth. The present passenger traffic amounts yearly to approximately 1,500,000 people on the Hudson River above the city of Hudson.

Fifteenth. The total freight traffic amounts to approximately 6,000,000 tons.

Sixteenth. The value of the freight traffic at the present time amounts to approximately \$115,000,000.

Seventeenth. The Capital District has cheap available land conveniently located for dockage and storage purposes and a large population to draw on

for necessary labor for handling freight, all of which will cheapen the terminal charges.

Eighteenth. The city of Buffalo, located at the western terminal of the Barge Canal, will be called upon to feed this grand artificial waterway which our great state has constructed for not only the use of the people of New York State, but for the use of the entire nation.

Nineteenth. The Capital District has more passenger and freight trains daily than the city of Buffalo, from which you can see that this is a logical terminal of a big waterway system which will be called upon to relieve the Barge Canal at its eastern terminal of the freight which passes through it.

Twentieth. The deepening of the Hudson River is not antagonistic nor will it hurt the railroads which enter or pass through the Capital District, as there will be enough of local freight and through freight from the West to support both the railroads and the canals. Therefore both their interests are identical and should be directed towards the one issue, that of preventing the Canadian railroads working in conjunction with the Canadian canal system which that government has built and proposes to enlarge and deepen to accommodate sea-going vessels, and thereby divert freight which is now being carried on American railroads and shipped from American ports.

The figures I have given which relate to freight, on account of the way in which they are collected, are considerably lower than the actual amount shipped and several hundred tons under the amount of freight that would have been transported by water if we had had the up-to-date methods for handling freight as the railroads have that pass through this particular terminal point.

It is unnecessary for me to say anything in relation to the splendid class of freight and passenger boats which ply between New York City and the Capital District.

When this river has been deepened to twenty-seven feet, as it surely will be in the near future, we will open up water transportation between cities on the Great Lakes and San Francisco. Freight rates by water will be from \$1 to \$2 per ton cheaper between Chicago and San Francisco than the rates on similar freight by rail across the Rocky Mountains. Freight from the Pacific coast can be delivered in the same bottoms to the Capital District and from here redistributed throughout the New England, the Central and Middle Western States. Every city through the central part of New York and the middle Northwest will be 150 miles nearer the sea, both for its export and import commerce.

The following articles will be shipped from the Pacific coast and South America to the Capital District and redistributed throughout the great Middle West and the states which border on Lake Champlain and the Great Lakes, provided you make of the Capital District a seaport town. Thereby you will cheapen the cost to the consuming public in these localities on lumber, asphaltum, coal, oil in tank boats, guava for fertilizer, railroad ties from Japan, packet cargoes loaded at San Francisco, including freight from Alaska, British Columbia, China, Hawaii, Philippines, west coast of Mexico, and South America; sugar, coffee, teas, and spices, etc.; packet cargoes reloaded at Balbao and Panama with freight from South America; intercoastal freight from Canada; cotton, wool and lumber from the Southern States. The boats returning will be loaded with cargoes from Canada, the northern New England States via the Lake Champlain Canal, and from the Great Lakes and Middle West through the Barge Canal, insuring enough exchange freight to reload all vessels docking in the Capital District, and will consist of the following articles: Cotton goods and clothing, iron from the Great Lakes and Champlain districts, grain and apples from the Middle West, flour from western mills, starch from Iowa, cement from the Capital District, agricultural implements, electrical appliances, stoves, automobiles, locomotives, steel and other manufactured articles from the States of New York, Ohio, Illinois, Michigan, and Wisconsin; salt, gypsum, moulding sand, condensed milk, bicycles, books, steel bridges, canned goods, castings, copper ingots, drugs, chemicals, furniture, minerals

from our mines, oats and hay, all classes of manufactured iron products, railway cars, and food products from the great West.

In conclusion, I cannot conceive why Buffalo or any city, town, or village located on or near the Great Lakes watershed can afford not to be in favor of this project, as there is nothing that will do so much towards the advancement of the commerce of the Great Lakes as to bring that commerce 150 miles nearer the sea, which you will do by making the Capital District a seaport town. The people of the Pacific coast will benefit by cheaper rates from the interior and the interior will benefit by cheaper rates from the Pacific coast; the cities of the interior will profit by closer and cheaper rates with South America, and when the great city of exchange springs up, as it will, on the Isthmus, then we will be in a position to exchange our goods, no matter where grown or manufactured, with the least expense possible. Therefore this proposition of deepening the Hudson River is one that is beneficial not only to the State of New York, but to every other state in the Union.

WILLIAM J. ROCHE (Troy): Mr. President, in your introductory remarks about Congressman Ten Eyck, you said that he represented the Albany district. That is only partially true. Albany county is a portion of his district but the major portion of the city of Troy is also in his district. I think you will all agree with me that he has not only the appearance but the capacity to represent in the very best way not alone his district but the objects for which this Association was formed.

Now, Troy has still another representative in Congress; in fact, we have two members of Congress, for another portion of the city of Troy is in the Troy-Rensselaer Congressional District, represented by Hon. James S. Parker, of Salem, Washington county. By some telepathic operation, while I was preparing in my mind the remarks that I am now delivering, and without knowing that he was within any distance from me whatever, I proposed to speak about Mr. Parker, and when I had considered it mentally, who should walk in but the Hon. James S. Parker, of Salem, Washington county.

Now, next to our Republican friends, we Democrats know well how to carve out a Congressional district so as to get double representation and get the best that there is in it. (Applause.) That is why we have two members of Congress, and I want to say to you from my personal knowledge of both men, extending over a period of years, if all the other representatives in Congress from the State of New York should have added to their intelligence, the wholesome qualities of Congressmen Ten Eyck and Parker, the State of New York would get from the national government the just dues and recognition to which it is entitled. (Applause.)

PRESIDENT HILL: Congressman Parker, we would be delighted to have you appear before this audience who are in a receptive mood. (Congressman Parker comes forward.) I take great pleasure in presenting my friend, the Congressman from the Troy-Rensselaer district. (Applause.)

MR. PARKER: President Hill and Gentlemen: I have no set speech with regard to the deepening of the Hudson, but I wish to go on record as saying that I am as heartily in favor of deepening the Hudson River as far as the Troy dam as any man can possibly be, and I believe that the benefits that would be derived for this immediate locality, both on this side of the Hudson and the other, are almost impossible to calculate, because it would bring us right in close and intimate touch, as Mr. Ten Eyck said, with the seaports of the world. And I want to pledge myself now that, during my term of office in Washington, every effort that I have and every effort that I can make will certainly be directed toward the deepening of the Hudson River as far as is possible, in other words, as far as the Troy dam. I thank you. (Applause.)

PRESIDENT HILL: We are going to depart from the program now to hear from the Committee on Resolutions, with the consent of Mr. Barnes, who kindly yields to that suggestion, and I will call on Judge Cullinan, chairman of the Committee on Resolutions.

JUDGE CULLINAN (Oswego): Mr. President and Members of the Convention: The first meeting of the Committee on Resolutions, after due notice during the Convention, was held yesterday at 3:30 o'clock in this building, and it prosecuted its business after several successive adjournments and completed it at 12 o'clock to-day. This is the unanimous report of the committee which I am about to read:

THE COMMITTEE ON RESOLUTIONS.

New York State Waterways Association.

ALBANY, N. Y., *October 31, 1913.*

Your Committee on Resolutions having duly considered all resolutions referred to it, begs to submit the following report for your earnest consideration:

The New York State Waterways Association in convention assembled at the city of Albany, October 30 and 31, 1913, reaffirms its adhesion to the principles expressed in its Constitution and By-Laws and the policy to be pursued in securing for the people such action from the duly constituted authorities, whether national, state or domestic, as will furnish relief from the evils complained of and insure the operation of activities for the improvement of the rivers, harbors and waterways of the State of New York.

In view of the approaching completion of the Barge Canals, the greatest of the world's artificial waterways constructed by a single commonwealth, and the desirability of securing all facilities for their fullest utilization in the interest of the commercial welfare of the state and nation:

1. It is hereby resolved that the Senators and Representatives in Congress from our state be urged to see to it that suitable appropriations be made by Congress for carrying to prompt completion the several projects already adopted and now under way for the improvement of the ports of Buffalo, Tonawanda, Oswego, Plattsburgh, Albany, New York, the narrows of Lake Champlain and the harbor at Troy.

2. Our Senators and Representatives are further urged to present to Congress and the government the absolute necessity of making immediate adequate provision for the following specific improvements. The general distinction is made between work already approved by the national government and for which appropriations are made and under which the work is being prosecuted, and improvements where there is no appropriation made but to which we call the attention of the government as to the absolute necessity of making provisions for such improvements:

I.

At New York Harbor.

3. A channel at least 35 feet deep through the East River including Hell Gate, into Long Island Sound, with 30-foot access to East River wharves on both sides of the river as far north as Queensborough bridge, except for the area covered by Shell Reef, which is to be removed to a depth of 25 feet; a 20-foot access to wharves east of Blackwell's Island; the removal of Corlear's Reef, of the Rhinelander Reef and Port Morris Shoal; the completion of the channel between North and South Brother Islands and of the channel south of South Brother Island; the completion of a channel 300 feet wide and 18 feet deep for the Harlem or Bronx Kills.

4. Completion of the improvements in the waterway from the Hudson River to Long Island Sound or East River via the Harlem Ship Canal and the Harlem and Bronx Kills.

5. Improvement of waterways along the south side of Long Island connecting Gravesend Bay and Jamaica Bay on the west with Peconic Bay on the east.

II.**On the Upper Hudson.**

6. Construction of a channel 25 feet deep and not less than 400 feet wide in the upper Hudson as far north as the Troy-Waterford entrance to the Barge Canal.

III.**Lake Champlain.**

7. Construction of proper channels and harbors upon the Hudson River, the Champlain Canal and Lake Champlain.

IV.**Buffalo.**

8. Improvement of the inner harbor of Buffalo and widening the channel of the Black River Harbor.

V.**Tonawanda.**

9. Improvement of the harbors of Tonawanda and North Tonawanda and Tonawanda Creek from the Niagara River to the location of the proposed Canal Terminal, so as to accommodate the largest lake vessels, including the abatement of all obstructions to navigation on the part of lake vessels.

VI.

10. Construction of a submerged weir in the Niagara River in accordance with the plans recommended in the final report of the International Waterways Commission upon that subject.

VII.**Oswego.**

11. Appropriate improvement of Oswego harbor to permit the safe and expeditious handling of the increased traffic upon the completion of the Barge Canal and Canadian waterways.

VIII.**Port of Rochester (Charlotte).**

12. Appropriate improvement of the port of Rochester (Charlotte) harbor, to permit the safe and expeditious handling of the increased traffic upon the completion of the improved Welland Canal and anticipated increase of traffic upon the Great Lakes.

13. The Convention urges the proposition to furnish, develop and improve the Black River Canal and its extension from Carthage to Lake Ontario.

14. The great benefits accruing from a harbor in or at the Western Wide Waters, situate just west of the city of Rochester, are of such value that the said Wide Waters should be dedicated to that purpose.

15. We urge the necessity of connecting the Barge Canal with the coal fields of Pennsylvania by such route as shall furnish the maximum of efficiency and the minimum of cost.

16. The action of the Legislature of the State of New York for the construction of the canal connecting Flushing and Jamaica Bays is approved and it is urged that the Canal Board of the State of New York proceed speedily with the construction of the terminal at Jamaica Bay, and that the same be included in the referendum bill to be introduced in the coming Legislature.

17. We recommend that five persons be named by the President, who in addition to the President shall constitute a Committee on Legislation, which committee shall have power to prepare and cause to be presented to the Legislature suitable amendments to the Transportation Corporations Law and the Public Service Commissions Law of this state intended to safeguard and develop commerce upon the public waters of the state and which, among other things, shall confer upon the Public Service Commission powers and authority as to interstate commerce like unto those which have been conferred by Congress upon the Interstate Commerce Commission with reference to interstate commerce; and said committee is requested to appear before committees of the Legislature and advocate the passage of such amendments.

17. That this Convention declares it to be sound public policy that railroad corporations shall not either directly or indirectly be permitted to purchase or hold or in any manner control the stocks of navigation companies, or to operate barges or vessels upon the canals or other public waters of the state, or control said operation, directly or indirectly, and the Convention is in favor of making the existing statute on the subject of such stock ownership more effective than it is.

19. Said Committee is also directed to present to the Legislature such measures as may be necessary to protect the Barge Canal, its terminals and their appurtenances and safeguard the same in the interest of the people of the state. We urge upon the state officials who have jurisdiction in the matter, the speedy completion of the Barge Canals and the carrying out of the intent and purposes of the referendum act of 1911, providing for the establishment and operation of state terminals and their facilities.

20. The conservation of the natural resources of the state is a question requiring the most careful consideration. Legislation is desirable for the development of all natural resources in the interest of the people of the state, but without prejudice to legitimate enterprise or interference with vested rights.

21. The officers of this Association are also further requested to transmit to the members of the Legislature in 1914, the action of this convention on all matters which require legislation and requesting their assistance and co-operation in the premises. They shall also communicate with the state authorities, relative to all matters mentioned herein within the sphere of their respective duties and respectfully request their assistance and co-operation in carrying out the various projects approved by the Convention.

22. That the President be authorized to appoint a committee of five to inquire into and consider the practicability with Federal co-operation and after conference with the authorities of the Dominion of Canada and the State of Vermont, of affording a convenient and short water transportation route between the port of Montreal on the St. Lawrence and tidewater via Lake Champlain, the Hudson River and the port of New York, for the mutual advantage of the Dominion and of the States of Vermont and New York.

23. That this Association favors the principle of the fourth proposed amendment to the Constitution of this state, commonly known as the Burd amendment, and urges its adoption upon the voters of the state regardless of party, at the approaching election.

24. The officers of this Association are requested to transmit to the members of Congress from this state the action of this Convention on all matters requiring governmental action.

25. Said officers are also requested to transmit to the proper officers of the Engineer Corps of the Army, the action taken by this Convention on all various subjects on matters herein referred to.

26. We desire to express our approval of the project advocated by the Atlantic Deeper Waterways Association for the construction of an intracoastal

waterway from New England to Florida as one which would vastly increase facilities of commerce and transportation in the Atlantic Coast States, and therefore worthy of national consideration and aid.

27. Appreciating the cordial interest manifested by Governor Glynn in our Barge Canal, now happily approaching completion, and in securing justice for our state in the matter of appropriations from the general government for greatly needed river and harbor improvements,

Resolved, That the Governor be advised that it would afford great satisfaction to this Convention if he shall be able to attend the next session of the River and Harbor Congress at Washington as the representative of New York State.

JUDGE CULLINAN: I move the adoption of the resolutions as read.

Motion seconded.

PRESIDENT HILL: Are there any remarks? I think the resolutions have been prepared by nearly all the members of this Association. I assume that you are familiar with them inasmuch as they have been read very carefully. Are there any remarks on the adoption of the report of the committee? If not, all who are in favor will please make it manifest by saying "aye," contrary-minded "no;" the resolutions are unanimously adopted.

The Chair recognizes Mr. Charles E. Reid, of the North Side Board of Trade, for an announcement.

MR. REID: In accordance with the action of the Executive Committee relative to the dinner in Washington, D. C., I would, on behalf of the special committee, offer the following resolution:

Resolved, That the New York State Waterways Association shall provide a dinner in Washington, D. C., on Thursday night, December 4th, during the sessions of the National Rivers and Harbors Congress, to which shall be especially invited as guests of the New York State Waterways Association, the United States Senators and Representatives from the State of New York. And be it further

Resolved, That at such dinner shall be presented for the information of the guests all matters pertaining to the rivers, harbors and canals of New York State as require the attention of the United States government. And be it further

Resolved, That the President of this Association be empowered to appoint a committee of fourteen members who shall have the underwriting of and arrangements for such dinner in charge.

The resolution was adopted.

Other resolutions were presented as follows:

By a special committee, through Mr. Douglas, Troy:

Resolved, By the New York State Waterways Association that we appreciate the courtesy of the Albany Chamber of Commerce in inviting our Association to hold its Fourth Annual Convention in the Capital City of our State. And be it further

Resolved, That we highly appreciate the efforts made by the Albany Chamber of Commerce for the entertainment of the members, of the provisions made for conducting our business of the Association, all of which have been so successfully consummated.

Resolved, That the thanks of the New York State Waterways Association be extended to the Albany Chamber of Commerce for these many evidences of its friendliness. And be it further

Resolved, That the thanks of this Association be extended to the newspaper press of Albany, Troy and vicinity, and to the people of Albany for their generous interest and support in our work. And be it further

Resolved, That the thanks of the Association be extended to President Peter D. Kiernan, of the Albany Chamber of Commerce, for the "surprise" luncheon tendered by him to the officers and members of our Association at the Hotel Ten Eyck on October 30th. And be it further

Resolved, That the thanks of the Association be tendered to the State Board of Regents and to Mr. George M. Wiley, chief of the Administration Bureau, Department of Education, and his assistants, for placing at our disposal the auditorium and committee rooms of the Education Building during the sessions of our Convention, and for the many courtesies extended to us. And be it further

Resolved, That our Association hereby expresses its appreciation of and warmest thanks to the gentlemen who have prepared the very instructive papers and addresses, including the beautifully illustrated lectures, which have been presented to this Convention.

Seconded and adopted unanimously.

By J. Y. Read, Albany:

Resolved, That the President be authorized and empowered to appoint such additional members of the Executive Committee as he may deem advisable.

Seconded and adopted unanimously.

By E. Van Kleeck, Waterford:

Resolved, That article 4 of the Constitution be amended by striking out the word "three" and inserting "four" between the words "President" and "Vice-Presidents," the effect of which is to increase the number of Vice-Presidents from three to four.

Seconded and adopted unanimously.

By Dell L. Tuttle, Buffalo:

Resolved, That the action of the Executive Committee of this Association at a meeting held Wednesday, October 29, 1913, recommending that a committee be named to arrange for a reception and dinner to our Senators and Representatives in Congress at a suitable date during the coming session of the National Rivers and Harbors Congress in December next at Washington, D. C., be approved, this committee to be appointed with power to make all arrangements and provide a financial plan to carry out the provisions and intention of this resolution.

Resolved, That the above committee, which shall consist of fourteen members, five of whom shall be designated by the Executive Committee and ten by the President of this Association, shall also represent the New York State Waterways Association and act as a committee to appear at hearings before the Rivers and Harbors Committee of the House of Representatives on matters pertaining to and affecting the objects, aims and purposes of this Association.

Seconded and adopted unanimously.

By Miles Ayrault, Tonawanda:

Resolved, That the continuous, valuable and fruitful labors and sacrifices of the President of this Association, Hon. Henry W. Hill; of the Secretary, Frank S. Ellsworth; of the Treasurer, Olin J. Stephens; of the Chairman of the Executive Committee, Hon. George Clinton; and the other officers of the Association during the past year, and Hon. P. W. Cullinan and Hon. Charles F. MacLean, deserve and are hereby accorded recognition by this Convention, and

the sincere thanks of the Convention are hereby extended to these officers in appreciation thereof.

Seconded and adopted unanimously.

MR. DOUGLAS: May I be permitted to renew the resolution I offered at the opening session this morning? After consultation with Judge Cullinan, we discovered that there is no objection in his mind with regard to it and so I move that the President of this Association appoint a suitable committee, numbered as in his discretion is found best, to represent the Association at the coming National Rivers and Harbors Congress, and that the President of this Association be the chairman of that committee.

Motion seconded and carried.

JUDGE CULLINAN (presiding): The next business of the afternoon is the address, "Albany as a Seaport, Its Advantages and National Importance," by Hon. Mortimer G. Barnes, consulting engineer of the Barge Canal. Mr. Barnes.

ALBANY AS A SEAPORT, ITS ADVANTAGES AND NATIONAL IMPORTANCE.

MORTIMER G. BARNES (Albany): Mr. Chairman and Gentlemen: When invited to give a talk on deeper waterways, or Albany's advantages as a seaport, I saw visions of an opportunity to further the interests of the transportation facilities of the greater State of New York. Later I was told that I would have an opportunity to present only a few headlines, as there was but a limited amount of time available for each subject.

Accordingly, I have a few headlines I want to touch on, with the expectation that in the future this will be enlarged and be placed in your hands in a printed form. My talk will be a disjointed one, and our good friend, Congressman Ten Eyck, has still further disjointed it by using some of my arguments. However, it is a very great subject and one that should interest the people of the entire state and nation a great deal more than it has.

The subject assigned me is "Albany as a Seaport, Its Advantages and Its National Importance." Albany has been known as a seaport ever since the United States has been known. It is one of the oldest settlements in the United States, and from an early date it attracted great attention as one of the frontier settlements and frontier seaports — the farthest inland that sailing vessels could reach.

It held that position for some time until the advent of steam and the larger vessels, when their draft made it impossible for them to reach this port. Since that time the port has declined until now we see but an occasional masted vessel that reaches this vicinity.

In order to become a great seaport, there are at least four conditions that must prevail: first, the point must be located on a protected portion of the sea, or an arm of the sea that is either naturally available or can be made so at a low cost; second, it must have ample harbor facilities, ample room for ships; third, it must have a rich hinterland, rich in the production of freight; fourth, the transportation and distributing facilities of this hinterland must be sufficient to handle the freight.

Answering the first question, I want to compare the location of Albany with some of the more important seaports of the world. Manchester, for example, is some 35 miles from Liverpool and the open sea. The Manchester ship canal was opened some 17 or 18 years ago. They encountered great opposition from Liverpool and it took several years to launch their project, at a cost of several millions of dollars, but the traffic of that canal has increased from nothing at the beginning up to five or six million tons annually now, against a toll of some \$2,000,000 per year. The canal has five sets of locks. Its minimum width is 90 feet and its depth 26 feet, which has been recently increased.

Hamburg, another port, is located on the Elbe, 85 miles from the sea. Where originally it was a swampy, marshy stream about six feet in depth, it has been increased so that the largest ships reach Hamburg from the ocean and the Hamburg-American line is known all over the world.

The Suez Canal, 100 miles in length, has a bottom width of 172 feet and a depth of 26 feet. That accommodates the traffic of over 18,000,000 tons per year.

Albany is about 140 miles from the open sea, on a natural arm of the sea, navigable for at least 120 miles to large sea-going vessels. It has a width of at least 600 feet, and for a great part of its length is wider than that. The section that is not now navigable can be made navigable to Albany at an extremely low cost. I will bring that out later. So that we are better situated than any other of the foreign seaports that have become the great seaports of Europe.

Secondly, the port must have ample harbor facilities. I have had distributed among the audience maps showing our harbor facilities. The largest, this long map, shows a layout below Albany, consisting of slips and terminals — not by way of recommending this special lay-out but as showing the great possibilities of the low-lying lands south of Albany. On the eastern shore, between the channel and the New York Central Railroad, I have shown the Bush terminals, the largest privately-owned terminals in the world. On the western shore I have shown slips 1,000 feet in length, 200 feet longer than the new Chelsea slips in New York City. And between these two improvements, I have shown a channel 1,400 feet in width. That channel is equal to the channel under the Brooklyn Bridge in New York City. So that we have here a width of one mile of low, flat land, several miles in extent, that can be most cheaply converted into a large shipping center.

Now, as to the cost of this channel, engineers have estimated that a 600-foot channel can be made up to Albany, 30 feet in depth, for approximately \$12,000,000. In regard to the cost of the docks and terminals after we get here, it would cost for a site for a dock in New York City from \$1 to \$10 per square foot, depending on the location. Assuming that it will cost \$2 per square foot, one of the large docks shown on the west shore on this map, with its slip and railroad connections, would require about ten acres. If that were built in a location in New York City where the cost is \$2 per square foot, the cost of the land alone would be \$1,000,000. The cost in Albany at this location — this land can be bought at farm prices — would be about \$10,000. There you have the cost of the site for one dock in Albany, \$10,000, against the cost of a site for a similar dock in New York City, \$1,000,000.

Now, in making this comparison with New York City, I don't in any way want to detract from New York City as a harbor or a terminal. There is ample business for both Albany and New York. New York is now turning away trade by reason of its not being able to accommodate it. I am told that the Dock Department has to refuse as many as 20 applications every day for docking facilities. These vessels and their lines are going to other ports to seek accommodations simply because of its being impossible to get the accommodations there that they desire.

Referring to the rich hinterland — the State of New York is filled with manufacturing centers. Every town and hamlet between Albany and Buffalo is a rich manufacturing center. You can scarcely name one but what has some industry that is of great importance. Back of New York State we have the great Northwest that is the greatest and richest freight-producing country in the world. Then north of us there is Canada and its undeveloped resources looking for an outlet.

The fourth subject is transportation and distributing facilities. At Albany we find the terminals or division points of the New York Central railroad, the Delaware & Hudson railroad, the Boston & Maine railroad, the Boston & Albany railroad, and their connections to all parts of the United States, and, when completed, the Barge Canal that will give a navigable depth of at least 12 feet and a length of over 1,000 miles within the State of New York. We think of our Barge Canal as 450 miles in length, but the Barge Canal with its connections in the State of New York gives a navigable channel at least 1,000 miles in length.

Next, let us refer to the second map that has been given you. On that are shown distances from Albany, New York, Boston and other points on the seaboard to the interior, showing the favorable location of Albany — Chicago being the objective point in the Middle West. From Chicago to Albany is a distance of about 837 miles. From Chicago to New York is something over 900 miles — thus increasing as you go down the Atlantic Coast. From Chicago to New Orleans the distance is much greater than to any of the points on the Atlantic seaboard. Thus Albany is better located to receive the commerce of the great West than any other point.

The shaded portion of that map shows an area of about a million and a quarter square miles, with a population of over 30,000,000 people, and a productive capacity in grain of about 5,000,000 bushels per year. That great empire is seeking the commerce of the world, seeking an outlet, and in return they want the products of the world.

Every dollar spent for transportation is a dollar lost. The purpose of a terminal at Albany is not to reduce freight rates but to reduce the cost of handling and transmitting freight. We don't want to antagonize the railroads in this matter. They have all the business they can handle, in addition to all the business that the waterways can handle, and we only want to so provide for shipping that we will spend the minimum amount of money for the transportation of our commodities — for the getting of freight from producer to consumer.

The great railroads and steamship companies have done their utmost to hasten products from producer to consumer, at an enormous rate of speed, to reach the terminals, there to meet an aggravating delay due to their congested condition. If we can relieve that condition and handle in a modern way the freight after it reaches the terminal, we have thus far reduced the cost of handling and delivering freight.

I want to refer again, although it has been touched upon this afternoon, to what the Canadians are doing and are attempting to do in the way of increasing their canal facilities. They are now entering on a project of enlarging the Welland Canal to a depth of 30 feet, with locks of sufficient size to accommodate the largest vessels on the Great Lakes, at a cost of about \$50,000,000. The city of Toronto, wishing to secure the trade that Buffalo now has and has enjoyed for a great many years — the Great Lakes trade — has entered on a project that will eventually cost them \$20,000,000 for a terminal to secure the Great Lakes trade and divert our traffic to the north.

Moreover, the Canadians are proposing the construction of the Georgian Bay Ship Canal at a cost of about \$200,000,000, to decrease the distance from the Great Lakes to the Atlantic, connecting with their splendid harbor at Montreal. The advocates of that canal, knowing the necessity of a ship canal and desiring to divert the traffic through their waterways, have made this statement, which I will read:

“A deep water outlet from the lakes to the ocean is certain to be built on some route or the other in the near future. With the fact definitely established that a waterway of proper dimensions was sure of construction within a reasonable time along the Georgian Bay, Ottawa and Montreal route, it unquestionably would not pay to build a canal on any other route. On the other hand, it must be borne in mind that if this great natural waterway is neglected and a ship canal constructed through the United States, the chance of Canada obtaining any increase of export trade is not only gone but the volume she now secures will be taken from her. The Montreal-Ottawa and Georgian Bay Canal, once constructed and in operation, the St. Lawrence River for seven months in the year will become the gateway for the whole of the export and import trade of the richest and largest part of the North American continent east of the Rocky Mountains. The Dominion of Canada will have a national waterway entirely within her own territory far removed from the international boundary and free from international complications, a waterway which under no conditions can be used by the United States to assist them in wresting out of Canadian hands the carrying trade of the products of her own Northwest, and it will secure without possibility of competition Canadian traffic for

Canadian ports. It will foster existing and create new inter-provincial trade, both east and west, thus drawing closer the bonds of confederation and enormously augmenting the national wealth and power of the whole Dominion."

That is how they look upon this matter, and the importance they attach to securing the trade of the United States, as well as their own trade, for foreign commerce. If we can cut off 150 miles of rail haul between New York and Chicago, we have gone a long way towards diverting that trade through the New York harbor and other American harbors rather than permitting it to go through Canadian waters, which will only be open, for the most part, seven months in the year, whereas we can make Albany an open port the year around.

The transcontinental trade of the United States, that is, our internal commerce from ocean to ocean, amounts to about 6,000,000 tons per year. The trans-isthmian railroads now ship about 15 per cent. of that freight, in face of the handicap of loading and unloading from cars to boats at both terminals. With the completion of the Panama Canal, the distance between our two seaboards will be decreased by at least 8,000 miles. We can then ship freight from Albany to San Francisco for at least \$12 per ton less than it can be shipped from the Mississippi Valley to San Francisco direct by rail. That means that with the completion of the Barge Canal a large part of this 6,000,000 tons of transcontinental freight—50 per cent. of which originates in the Mississippi Valley—will be diverted to the Atlantic coast, to Albany as a seaport, thence by water through the Panama Canal to the Pacific coast.

In negotiating for a large bill of lumber recently, we had occasion to ask a man for a quotation for delivery in the vicinity of Rochester. He gave us a quotation. He said: "If you will wait for the delivery of that until the completion of the Panama Canal, we can lay that lumber down to you for less than you can get yellow pine or other lumber from the South." If Albany is made a seaport, the distributing of that lumber can be made most cheaply at Albany as shown on this map. We have an area for large lumber yards that nowhere else exists.

The saving in freight rates in shipping from Albany to the Central West as against New York City will average—as I have letters from railroads and others here showing—at least \$1.25 per ton. In addition to the saving in freight—not the reduction in freight rates but the saving in freight—there is the terminal charge which in New York City must necessarily be high in order to pay even a small fraction of the interest on the cost of development.

One of the speakers this afternoon said that one of the systems of piers in New York harbor was being leased at a rate of 2 per cent. of the cost of construction. Those piers are leasing now for \$70,000 per year each, the rental increasing 10 per cent. every ten years, or at the rate of 1 per cent. a year, showing that with the congestion that is experienced and with the higher cost of land for terminal facilities, the rental of one pier in New York harbor at \$70,000 a year at 2 per cent. on the cost of construction represents a capitalization of \$3,500,000. The cost of that one pier would build a whole system of piers and terminals in the vicinity of Albany and have money left for their maintenance.

The property on which the Chelsea piers were recently constructed cost \$9,350,000. River-front property at Albany, suitably located for such piers, would not cost to exceed \$90,000. The cost of property alone for these seven piers exceeds the amount necessary for a 600-foot channel 27 feet deep up to Albany. These are only a few of the points that are patent and that we can prove to the satisfaction of our Congressmen if we are given a chance.

In conclusion, I wish to say that we believe that we have proved to your satisfaction that Albany answers all of the conditions mentioned in the outline. I hope that you will do all you can with your Congressmen to further this project, believing that it is a question of national importance and that with the completion of our project for the conservation of water we can develop at least 350,000 horsepower in this district, twice that which is developed at Niagara Falls on the American side, and support a population many times greater than our present population.

The time is now ripe for this great enterprise. Let us not wait until some other community is reaping the benefits of the completion of the Barge Canal and the Panama Canal and Albany has to be satisfied with a few of the crumbs that are left from our more fortunate neighbors.

JUDGE CULLINAN: That seems to be about the end of our published program.

MR. KILLMER (Brooklyn): I would like to call your attention to one thing before you get reports from the committee. The President of this Waterways Association requested Hon. Henry A. Reeves, ex-Senator, residing at Greenpoint, Long Island, to prepare a paper upon the south side waterways of Long Island, which he did, and sent it here in printed form and it has been distributed and I would ask that it be made a part of the proceedings of this Convention.

JUDGE CULLINAN: Are there any objections? If not, it is so ordered.

LONG ISLAND INLAND WATERWAYS.

The paper follows:

At the request of the Hon. Henry W. Hill, of Buffalo, President of the New York State Waterways Association, the following paper has been prepared for use at the annual meeting of the Association, to be held at Albany on October 30 and 31:

In as brief and comprehensive a way as possible I desire to present facts and considerations which make for the importance and utility of the proposed improved waterway on the south side of Long Island through the several bays which unite to form a continuous inland passage from Peconic Bay at the eastern end of the Island to Gravesend Bay at its western end. The Long Island Inland Waterway Association is affiliated with the New York State Waterways Association, is in full sympathy with its objects and aims on behalf of a systematic development of the state's commercial and industrial interests as related to transportation by water, on a broad and liberal basis; it therefore lays a confident claim to the attention and favor of this body, and respectfully solicits its co-operation and aid in an effort to secure from Congress an appropriation of enough money to provide a sufficiently wide and deep waterway between the two ends of the Island.

Fact 1. The present population of Long Island considerably exceeds 2,000,000 people, and at its recent rate of normal growth it is reasonably certain to approach or exceed the five million mark within ten years from this date.

Fact 2. The yearly output of the agriculture, manufactures, commerce and fisheries of that part of Long Island which is outside of the city of Brooklyn, and all of which will, to a greater or lesser extent and in a more or less direct degree, be beneficially affected by the operation and effect of the proposed waterway, is conservatively estimated to exceed \$100,000,000, and is known to be steadily increasing from year to year.

Fact 3. The proposition to which attention is now invited is a simple and a comparatively easy one. It is to dredge a channel tentatively outlined as 200 feet wide by 10 feet deep, from the Peconic Bay mouth of the Shinnecock Canal, which by legislative act has become a component part of the state's canal system, through the canal into Shinnecock Bay, through that bay and its contiguous waters on the west into the Great South Bay, and through that bay to Gravesend Bay, where its western terminus may connect with the United States government and the New York State improvements which have for their object the transforming of Jamaica Bay into a great adjunct to the harbor of New York City and a suitable coast terminal for the Barge Canal. The natural difficulties to be overcome in securing this desired result are

nowhere formidable. Over most of the way mud and sand are the only material to be excavated; no rock bottom is to be met with, and there are only a few and unimportant points between Great South and Gravesend Bays whereat, in order to straighten and shorten the route, it will be necessary to cut through solid earth. Such dredging, with removal of dredged material to a proper distance, would be an easy job and consequently would not involve any large expense. The only source from which opposition might be expected to come would be the owners of planted oyster beds in some parts of the bays; but inasmuch as the authority of the United States government in such cases has been definitely and fully established, a state commission to adjust any damage claim of that nature would be sure to meet with acquiescence on the part of the planters, and a moderate appropriation would provide the requisite compensation.

Fact 4. Nature has opened the way for the easy, cheap and successful accomplishment of this waterway. A chain of connected bays, locally different in name but practically one in fact, lines the southern shore of the Island, for a distance of about 100 miles in a substantially east and west line, and are separated from the outer ocean by a beach of varying width and consistency but without an inlet westward from Shinnecock to Fire Island. The problem to establish a channel sufficiently straight, wide and deep to admit of the passage of vessels from its beginning at the mouth of the Shinnecock Canal on Peconic Bay, to the terminal in Gravesend Bay, does not seem to present any very serious or expensive engineering difficulties. If the only propulsive force for vessels that would navigate such a channel was to be the use of sails, the scheme might be condemned as impracticable, since in that event it would involve a greater width than the proposed 200 feet; but, in fact, except in certain limited uses, sail power on the smaller classes of vessels used for either commerce or pleasure, has given place, wholly or in part, to various forms of power generated by engines and insuring direct, swift, and certain movement in almost any condition of weather likely to arise on this sheltered waterway. On vessels that would make use of such a channel there has been a very general substitution of power engines for sails, either wholly or as an auxiliary when wind is not available; and the process is going steadily forward; its advantages are such that the day is not distant when only pleasure craft of small tonnage and light draft will be propelled by sails alone. It is for the benefit, therefore, of vessels driven by power other than sails that this channel is mainly desired.

Fact 5. Beside the commercial and yachting facilities secured by this channel, whose value in these respects may fairly be regarded as immeasurable, there is the further advantage which would accrue to the United States Navy in having a short and safe inland passage for its smaller grades of vessels drawing less than ten feet of water, instead of the longer and more exposed passage around Montauk and along the south coast of the Island, or through the longer and hardly less dangerous stretch of Long Island Sound. This advantage is of enough importance and value to fully justify an appeal to Congress for funds to dredge the channel.

Fact 6. In event of the establishment of the proposed coastal waterway along the Atlantic seaboard from Maine to Florida, this Long Island inland waterway could and should be considered as a natural constituent part of it, for all classes of vessels available to use it, including light draft tugs for towing loaded vessels. Its assumed competitor, Long Island Sound, is not to be thought of in point of safety, certainty or rapidity of navigation. Statistics show that, apart from the notorious hazards and hindrances at Hell Gate, the navigation of Long Island Sound is attended by perils almost or quite as great as on any equal length of the Atlantic coast. Many disasters, involving serious losses of both life and property, have been recorded in the ill-starred annals of Long Island Sound, and its navigation at best and always is subject to costly delays by reason of adverse winds. The proposed inland waterway, therefore, should not be regarded as a purely local or secondary project, vast

as the results to be attained by it in this sense will be; but it rises into the foreground of general merit, looked at from either a Federal or a state point of view. As a Federal measure it deserves consideration for the service it would render to the Navy Department in time of need, and also as an essential part of the coastal waterway; as a state measure it would work a practical extension of the Barge Canal 100 miles to the safe and deep waters of Peconic Bay, at a cost to the state almost significant in amount.

As a consideration and a conclusion following the above recital, the substantive truth of which will hardly be disputed, the question is respectfully submitted to the State Waterways Convention whether the proposition to dredge a channel in and through the bays on the south side of Long Island, connecting its eastern end and the open ocean beyond with the great improvements made and making in and about Jamaica Bay for the enlargement of New York harbor and the expansion of its domestic as well as foreign commerce, does not deserve the endorsement and commendation of the State Convention.

All of which is respectfully submitted.

HENRY A. REEVES.

Greenport, L. I., October 20, 1913.

JUDGE CULLINAN: During the course of the proceedings the State Conservation Commission desired to be heard on certain matters within the purview of their work. I understand Mr. Moore is present and it gives me great pleasure to introduce Hon. John D. Moore, State Conservation Commissioner, who will now address you.

MR. MOORE: Mr. Chairman, Ladies and Gentlemen of the Association: In his characteristically adroit and able address, Mr. Clinton put into his argument opposing the hydro-electric scheme, as proposed in the last Legislature, every ounce of weight which could possibly be crowded into it. I am frank to concede that Mr. Clinton said everything that could be conceivably urged against the plan which he discussed with such skill and with such thoroughness.

However, it is a pretty poor question that has not two sides. If it has not two sides, no one will ever discuss it. If this question did not have two sides, Mr. Clinton himself, most of all, would never have discussed it. Now, human nature is so constituted that two men of similar intelligence will look at the same set of facts and draw from those facts utterly opposite conclusions. That is why we have Democrats and Republicans, and possibly that is why there are a few Progressives. (Laughter.)

So Mr. Clinton has drawn one set of conclusions and I have drawn another set. And so, although I was reluctant to inject any element of discord into these proceedings—and I disclaim doing so—I did feel that in justice to a very great number of men who have given sincere, earnest and competent thought to this subject, their side of it ought to be made known, and so I rose as I did yesterday and asked the permission to speak, which has been granted me, and for which I thank you.

Mr. Clinton urged a number of points against the bill and at the beginning of my discussion of this subject I want to say that every point which Mr. Clinton adduced in his opposition to the hydro-electric bill was adduced against the Erie Canal and against the proponents of the canal when the waterway which made the name of Clinton famous was first discussed in this state a hundred years ago.

To summarize his objections, they rested upon four cardinal points: One of those is that it is an unwarranted interference with private business; another that it is wasteful and dishonest, his own language being that "politics would inject greed and graft into the undertaking." The third objection was that state administration of such undertakings was invariably disastrous. The fourth was—and it can be urged against almost every avenue of public effort to-day—that it was socialistic.

I dissent positively from every one of his conclusions. He himself, being so familiar with the history of the New York canals, can recall the vicious

opposition of the stage drivers, who carried people from Albany to Buffalo, because the canal would put them out of business, and do you suppose the men carting material at \$25 a ton from the lakes to the Hudson were enthusiastic about the idea of the state building a canal to put them out of business?

To get down to modern times, were not the same objections urged against the Panama Canal when the railroad lobby at Washington for a generation asserted it was in the realm of impossible things? History of a hundred years ago repeating itself right in these days in the capital of the nation!

Here in this temple of education it might be fitting to call to your attention the invaluable public undertaking which in its time incurred the most bitter, the most unrelenting and the most widespread opposition, and I refer now to our public school system. We are now in a building of a department which is spending \$8,000,000 a year of the state's money for the mere task of supervising and supporting, in an indirect way, the school system of the state. The city of New York has 750,000 children in its public schools and is spending close to \$30,000,000 a year educating them. It was only last year, ladies and gentlemen, that this state celebrated the first centennial of our public school system. There are men present who know United States history but have come to believe that our public school system is a product of remote Colonial times. It was not. It is modern.

When public schools were installed in this State there was an outcry from private school interests beside which the discussion on the currency bill and the tariff was as a summer breeze compared with a winter gale. But who to-day will rise to criticize the public school system, to say that it is incompetently administered because in public hands, and is full of greed and graft and is wasteful, and dishonest, and, above all, that it is socialistic?

For these reasons Mr. Clinton stamped public ownership a failure? Is it a failure? On the other hand, in those branches in which public ownership and public operation are now the rule, are not these the successes that their advocates predicted for them, and which no man dares criticize now? Take perhaps the biggest single business in this nation, the United States mail. Is that incompetently, inefficiently or dishonestly managed? Any student of history knows that there has been a time in this country when it cost twenty-five cents to send a letter from here to New York, or from Boston to New York, and now we can send a letter from here to the Philippines for two cents, and the United States postal department is turning in a surplus every year.

But we do not have to go back to Benjamin Franklin's time — the day of the first Postmaster-General of the nation. Let us take the days of Frank H. Hitchcock and Albert S. Burleson, in our own day. On the first of January in this year of grace, 1913, the parcel post came into existence. I venture to say that there is not a man or a woman within the sound of my voice who does not almost think that the parcel post has been in existence for ten years, we are so accustomed to it, it has become so large a part of our life. You should read Postmaster-General Burleson's article on the parcel post in this week's *Saturday Evening Post*, in which he says it is destined to be the biggest commercial enterprise in the world.

But it may be said that these are natural functions of government. It is the government's business to run the canal, to run the schools, to run the mails, to run the parcel post. But I will instance something which a great many of you perhaps have never given any consideration to, which enters into your daily lives and which you can't live without — that is a domestic water supply. Do you realize that the homes of 96 per cent. of the urban population of the State of New York are supplied with water from waterworks which are municipally owned and municipally operated? Only ten cities in the State of New York now have privately-owned waterworks, and if you could see the files of the Conservation Commission and read the complaints against these private water companies, against conditions we are entirely helpless to remedy or to correct, and contrast that state of affairs with the utter absence of complaint against the municipal systems, you would concede that public ownership is not the failure which Mr. Clinton would fain have it appear.

In unmistakable language Mr. Clinton stamped the undertaking of the Hydro-Electric Commission of Ontario as an utter and complete failure.

MR. CLINTON (interrupting): Financially.

MR. MOORE: The people who think that the Hydro-Electric Commission of Ontario has failed all live outside of the province of Ontario. The men who are paying the bills and getting the benefit of their enterprise and foresight know that the Ontario scheme is a success. The Ferris Legislative Committee, of which Mr. Clinton spoke, went from end to end of the province of Ontario, and not within the borders of that province could they find a single individual connected or unconnected with the private lighting companies who would say on his oath, or not upon his oath, that that enterprise was a failure.

Let us look at the results of it. You have heard about Mr. Reginald Pelham Bolton's book, "An Expensive Experiment." Mr. Clinton praises that book. I will say to you without fear of contradiction that if the truth could be known, the advertising expenses paid by the promoters of Mr. Bolton's book would outweigh ten to one the receipts from the sales of that publication. Search that book from end to end and you can't find a reference to a single official document, you can't find the name of a single man who will stand for a single one of the assertions that Mr. Bolton makes in his book—not one; and I stand upon that statement, absolutely. Mr. Bolton's attitude on the subject does not need much illumination or explanation. Within 150 feet from the place where I stand Mr. Bolton took the witness stand in a proceeding instituted by the citizens of Albany to obtain regulation by the Public Service Commission of the electric lighting rates here. He appeared as the paid expert witness of the local lighting company and at page 382 of that record we find that Mr. Bolton unblushingly contends that the private monopoly for which Mr. Clinton pleads is entitled to a profit of not less than 25 per cent.! So much for Mr. Bolton and so much for his book and so much for his comments upon and condemnation of the hydro-electric scheme of the province of Ontario!

Now, a word about the very great success of that scheme. Early in 1912 thirty-four municipalities at a referendum voted to enter into this scheme, which was already operating successfully at that time, and applied to the Hydro-Electric Commission for current, so that, like other towns, they might do their own lighting. Never in the history of the scheme, from its inception until to-day, has one municipality in which the question has been referred to the voters refused to enter into it. In every case the verdict has been overwhelmingly and preponderantly in favor of undertaking this system of lighting, and no cause for regret has ever been found. Why not? Because the price of current has been reduced from 20 cents, in many cases, down to a flat rate, from one end of the province to the other, of not to exceed 5.5 cents per kilowatt hour.

The best evidence of all is an article which I quoted to the Legislature in the hearings which were held upon the hydro-electric bill when it passed both houses, only to be vetoed in the Executive Chamber. I quoted from the *Electrical World*, which, in an editorial upon this very plan which I am now discussing, stated in unequivocal language that this plan was patterned more or less upon the hydro-electric scheme of Canada "which for more than a year has been in highly successful operation." And what is the *Electrical World*? It is the accredited, recognized organ of the electrical machinery manufacturers. The issue from which I quoted contained 58 pages of reading matter and more than 100 pages of advertising. Is it to be thought of that this journal, the standard-bearer and the exemplar of all private enterprise in the electrical field, would say this if it were not true?

I could refer almost endlessly to specific cases in this country in which electrical work has been undertaken under governmental auspices and has been undertaken successfully, but the hour is late. I will quote the single case of the city of Seattle, which in 1906 entered upon a scheme of municipal hydro-electric lighting. To-day, the municipal plant of the city of Seattle, which city had a population, I think, at the last census, of 286,000, more or less—the city plant has to-day 25,000 customers on its lines. Since its institution the price of electric current in Seattle has been reduced from 20 cents to 6 cents, and in the fiscal year 1912 the plant earned for its citizens, after allowing for every conceivable element of cost, proper allowances being made for

depreciation, maintenance and obsolescence, and the other factors which sometimes, I concede, are overlooked in municipal and governmental enterprises, a profit of more than \$200,000. Is this plant profitable to Seattle? Let me answer in this way, that since the plant was inaugurated five successive bond issues have been laid before the voters of the city in a referendum and every one of them has been carried and every time the majority has been, speaking in terms of percentage, greater than it was before.

The National Electric Light Association held its 1912 meeting in the city of Seattle and Mr. Samuel Insull, who was then president of the \$71,000,000 Commonwealth Edison Company of Chicago and is now, I believe, president of the company, which is much greater than that, because there have been absorptions since — Mr. Insull said in a very pleasant way that “We are meeting in a city in which we have the unique condition existing of a municipal plant competing with a highly successful private plant.” That “highly successful private plant” is part of the generating and distributing system of a \$50,000,000 corporation, and to that I will allude later — the possibility of these private companies and municipal companies dwelling together in harmony and peace.

Now, if private monopoly, under regulation, were all that Mr. Clinton painted it, there would be no demand for a hydro-electric scheme under the auspices of the State. Nobody would ever dream of such a thing. The fact is that it is not all that Mr. Clinton painted it. Let us take the big cities of the State of New York — let us take Albany, for instance. In Albany there are 30,000 possible consumers of electricity, 30,000 families that ought to have electricity in their homes, because electricity is the logical light, it is the light everybody needs; nobody ever thinks of building a house without it. But only 4,000 of these 30,000 consumers are using electricity! Only 12 per cent. of the possible market in this town is being cultivated! Why? The question answers itself. Every man who has to pay an electric light bill knows the answer. You don't have to ask it of me.

Let me give you an instance that will appeal to you all when you go out of this building. You are now in what is probably the finest public building in the United States. I have traveled a great deal over this country and I don't know of a building which is more beautiful and more perfectly adapted to its purpose than this building is. This is electrically lighted from a state plant, but on the other side of the street you will find a lot of low buildings. In only one of those buildings in the entire two city blocks is there an electric light. Every other man there uses gas, with one exception, and that man uses kerosene lamps — across from this building, the finest temple of modern times — using kerosene lamps!

But Albany is not alone in cultivating only a small part of its field. Even the city of Rochester, which has a most progressive company, with a very progressive management, has only one customer out of every 25 people, or approximately that. Buffalo, Mr. Clinton's home town, which used to be boomed from ocean to ocean as the Electric City, according to the last returns to the Public Service Commission had only one customer out of 35, although at Buffalo's City Hall you can almost hear the roar of Niagara Falls! That waterfall can make plenty of water power and plenty of electricity, and it is doing it, but the people of Buffalo protested bitterly and the city of Buffalo appropriated \$25,000 for an investigation and began a legal contest with the Buffalo General Electric Company before the Public Service Commission to get the rates down to where they ought to be. The people in Buffalo, with Niagara Falls in their dooryard, were paying 9 cents a kilowatt hour, which is substantially the price paid in New York City where the current is generated by steam under the conditions Mr. Barnes has described to you, with waterfront property worth many dollars a square foot.

Utica has one customer in a possible 14; Binghamton one in 38. But what do we find in Ottawa? In Ottawa one person in every five uses electricity — in Ottawa where they have a private company and a public company. One person in every five, which means practically every householder or head of a family. Ninety-eight per cent. of the buildings in Ottawa are wired for electric current and supplied either by the private company or by the municipal com-

pany. Has the private company been destroyed?—and there I get back to what I promised to refer to later—No. When I was connected with the Westinghouse Company, years ago, our agents in Canada at that time were the very men who are now handling this private company. When the city entered the field the shares of the private company were selling for one-third of what they were selling for the last time I looked into the matter, and I have in the files of my office the usual bond-selling circulars from a bond house in the city of Toronto making a particular point of the fact that this private company was exceptionally prosperous and that its prosperity was guaranteed by the fact that its sole competitor was the city, thus making it certain that no other competitor would ever be able to enter the field. They just simply make a virtue out of the public competition!

Having hastily discussed these phases of the situation, I will now quickly finish. I feel, and I know you feel, that I have disposed completely of Mr. Clinton's objections, all but one, and that is whether there will be any surplus waters. Well, if there are none, certainly the plan can't harm the canal, which has the first claim to the water; if there are no surplus waters to run the plant, it can't run. It can't hurt the private company and it can't hurt the canal because the provisions of law governing the hydro-electric scheme guard against that.

But there are surplus waters. Mr. Barnes, who has just addressed you, the consulting engineer to the State Engineer's office, said in a report to the Conservation Commission that there are. We know precisely where we stand on that question, and it is simply a question of "Are you going to believe the men who want the plan to fail?" or "Are you going to believe the engineers of the state who want it to succeed and who have no interest in the world, except the interest of the State, to serve?"

I might allude to the fact that there is to-day in process of construction an electric plant—which has not been mentioned in connection with this scheme—which is going to use the identical drops of water which will flow over these two state dams at Visscher's Ferry and at Crescent. Is private enterprise being deluded? Is it investing its money under a false conception of what is going to be there, and we understand the investment is close to \$3,000,000? That question answers itself. Public officials are always stupid. Perhaps I am one of the most stupid ones, but I will pay this tribute to the engineers of this private enterprise—there is nothing stupid about them. I can state that with confidence because I have known them for fifteen years. Ladies and gentlemen, you can rely upon it that this private company is not investing its three million dollars on any chance or mischance; they know precisely where they are.

Mr. Clinton, not standing firmly and positively and flatly on his assertion that there will be no surplus waters, said, "Well, let us build the canal, let us operate it, let us get 101,000,000 tons a year going, and in the course of time"—"in the course of time" is his exact language—"in the course of time it may develop that there are surplus waters and then we can go ahead with the scheme." In substance, those were his remarks; paraphrased, it is true, but the sense is all there.

What does "the course of time" mean? It means the same old thing—postponement. As was said by an eloquent and a prominent advocate of this hydro-electric plan last year, "In order to get everywhere you have got to begin somewhere." Here is a place where the plan can be tried with a minimum of expense to the state, with a minimum of danger of loss to the taxpayers, and with a minimum of loss, if loss occurs."

But when the Bayne bill was urged in 1912 there was a divided Legislature—a Republican Assembly and a Democratic Senate. That Bayne bill, which called for a vast scheme of state development, passed the Senate and was beaten in the Assembly because its opponents said, "This thing is too big. Let's try it somewhere and see if it will work, but don't make it state-wide until you have tried it out on a small scale." Following that behest, we immediately set to work and this hydro-electric scheme of the Capital District, to which Mr. Clinton devoted most of his remarks yesterday, was devised and worked out. Then they turned about and said, "We are against that plan because it is not state-wide."

And so merchants' associations and chambers of commerce and industrial leagues that were never before heard of in the world, came down to the Capitol and said, "We are against this thing because it won't benefit our particular corner of our particular county." That did not have any effect on the Legislature of 1913. A couple of the members came from that particular county themselves. They knew those fellows had no standing in their own county or anywhere else and the bill passed both houses almost unanimously, only to be vetoed. Everybody agrees that the scheme is all right but its opponents continue to cry, "Don't try it now! Wait awhile!"

I have tried to lay before you in a brief and neccessarily hasty way the truth on this proposition from the standpoint of the Conservation Commission. I have tried to quote book, chapter and verse where I could, and I think that when you read what I have said and when the other members of your Association read these remarks in the record of your proceedings, you will come to the conclusion that perhaps there is another side to this question after all, that there is a great need to be served here, and that if this is not the correct way to serve it, certainly other arguments besides those adduced by Mr. Clinton have to be brought forward to prove it. I thank you very kindly. (Applause.)

GEORGE CLINTON (Buffalo): Perhaps it does not lie in my mouth, as I am crushed by the remarks of Mr. Moore, but I have been so edified and have so admired the temperate tone of his remarks and have so profited by the enlightenment which comes from a judicious argument, that I have the pleasure to move that this Convention thank him for his defense of the Conservation Commission.

Motion seconded.

MR. KILLMER (Brooklyn): Before the motion is put I want to make just one statement. I want to say—I think I shall say it, notwithstanding Mr. Clinton shakes his head—the remarks of Mr. Moore were directed almost entirely to Mr. Clinton, but I know, because I took part in the discussions before the Legislature, that quite a number of interests that did not come from Steuben county felt the interest of the state quite as much as the Conservation Commission, and the objection raised, and I want this Waterways Association to understand it, because in the near future we are likely to meet with this same thing again in the coming Legislature, and I think we should go on record here now as standing for the canal interests; after that it is time for some other interests. And I want to say here now that the objection raised by the people from the greater city of Greater New York was that they thought that it was a dangerous thing to undertake to build a hydro-electric plant on the part of the State of New York for a certain locality only of the state until they were positively sure that there were surplus waters of the canal to do it with. If there were surplus waters, they did not have a serious objection, although it was a benefit only to a certain portion of the people of the state. We can stand that and we are not jealous of what interests they might put upon the people of this locality if they could be benefited even by our helping to pay the tax from our end of the state, but if it was going to cripple the canal interests of the state by using that water that ought to be used for the canal, then we had objection to it and said, "Don't do it until that is far enough advanced to know for a certainty."

As we understand it, there was an auxiliary plant that was to cost several hundred thousand dollars to bolster up the surplus waters with a steam proposition to help out the electric plant when there was no water, and that was another thing that we did not think we should be called upon at this time to promote. I hope that this Waterways Convention will feel that Mr. Clinton and those who associated themselves with him did all they were doing in the interests of the canal interests of the State, and that they won't be hoodwinked by any talk of municipal ownership or operation, however good that might be.

MR. REID (New York): I hope there won't be any more discussion on this subject. We have heard the plaintiff and the defendant and I hope that will close it, and I second the motion of Mr. Clinton.

JUDGE CULLINAN (presiding): You have heard the motion of Mr. Clinton that we extend the thanks of the Association to Mr. Moore for his address. All in favor will please say "aye." The motion is carried.

E. W. DOUGLAS (Troy): I wish to present a further resolution. I move that our President, Hon. Henry W. Hill, be the regularly accredited representative of this Association to the Atlantic Deeper Waterways Association soon to assemble in Jacksonville, Florida, and in that connection, this Convention having received the information that there is a possibility that His Excellency, Governor Glynn, may attend such convention in Jacksonville,

Be it further Resolved, That the Secretary of this Association convey to Governor Glynn the assurance that his attendance at such convention will afford keen satisfaction to the members of this Association here assembled, and that this Association will regard itself honored and its interests served if Governor Glynn in his participation in the exercises at such convention will regard himself as a spokesman for our Association in conjunction with our honored President, Mr. Hill.

Seconded and adopted unanimously.

REPORT OF COMMITTEE ON NOMINATIONS.

MR. ROGERS: In the absence of Mr. Cobb, chairman of the Nominations Committee, I submit the following report:

The Committee on Nominations begs to submit the following list of nominations for officers and members of the Executive Committee for the ensuing year: For President, Hon. Henry W. Hill of Buffalo. (Applause.) For First Vice-President, Hon. John D. Kernan of Utica; for Second Vice-President, Henry A. Meyer of Brooklyn; for Third Vice-President, Hon. George H. Cobb of Watertown; for Fourth Vice-President, T. P. Kingsford of Oswego; for Treasurer, Olin J. Stephens of New York; for Secretary, Frank S. Ellsworth of Rochester. Executive Committee, Hon. George Clinton, of Buffalo, Chairman. (Applause.)

Executive Committee: Henry C. Allen, Syracuse, George F. Argetsinger, Rochester; Miles Ayrault, Tonawanda; Joseph H. Bailey, Patchogue, L. I.; Frank Brainard, New York; Celestin C. Burns, Watertown; Frederick W. Cameron, Albany; Edwin T. Coffin, Albany; Maurice E. Connelly, New York; Patrick W. Cullinan, Oswego; E. A. Des Marets, College Point, New York City; E. W. Douglas, Troy; T. Harvey Ferris, Utica; Edwin A. Fisher, Rochester; Frank S. Gardner, New York; L. B. Greene, Patchogue, L. I.; Howard D. Hadley, Plattsburgh; James T. Hoile, Brooklyn; James T. Hutchings, Rochester; A. H. Jagers, New York; Louis Jaeger, Greenport, L. I.; A. R. Kessinger, Rome; Nelson B. Killmer, Brooklyn; Richard M. McCann, New York; Robert J. McFarland, Brooklyn; S. Christy Mead, New York City; Edward F. Murray, Troy; John R. Myers, Rouses Point; Lewis Nixon, New York; Frank S. Oakes, Cattaraugus; Charles E. Reid, New York; William J. Roche, Troy; Robert H. Rogers, Schenectady; Samuel Sanders, Richmond Hill, L. I.; E. Platt Stratton, Flushing, L. I.; Edward R. Taylor, Penn Yan; Dell L. Tuttle, Buffalo; George W. Wilson, Brooklyn; Walter C. Witherbee, Port Henry; Edward N. McKinney, Albany; H. A. Meldrum, Buffalo; Peter B. Kiernan, Albany; Edgar A. Newell, Ogdensburgh; John G. Jones, Carthage; Homer E. H. Brereton, Lake George.

On motion of Charles E. Reid, the report was received and George Clinton, Jr., cast one ballot for the ticket as named. Mr. Clinton reported that he had cast the ballot as directed.

JUDGE CULLINAN: I declare that the ballot cast by George Clinton, Jr., in conformity with the report in question, is for the officers named and I hereby declare them the officers of this Association for the ensuing year. (Applause.)

MR. KILLMER (Brooklyn): I would move that a committee of two be appointed to escort the President-elect to the chair.

Motion seconded and carried.

JUDGE CULLINAN: The Chair appoints Mr. Killmer, of Brooklyn, and Mr. Kiernan, of Albany, as such committee.

The committee escorted President-elect Hill to the platform.

JUDGE CULLINAN: Mr. Hill, I desire to inform you that you have been unanimously re-elected to the office that you have so admirably filled during the past year. (Applause.)

PRESIDENT HILL: Judge Cullinan and Gentlemen of the Convention: I appreciate the courtesy of re-election to this position which I have tried to fill, and only could have filled acceptably with the active and hearty co-operation of all the members of this organization, and I hope that we may in the future conduct the affairs of the Association in a way which will continue to merit your hearty and intelligent support.

This Association is capable of doing great work if we can continue in the pursuit of subjects and the investigation of matters that concern the entire people. It is not an association to promote the interests or oppose the interests of any particular locality. It is a large, state-wide association, comprising representatives of all the commercial bodies of the state, and of all its political divisions, and with a representation from such a constituency it is not conceivable that its work would not be of great importance.

I am not going to detain you longer. I appreciate the courtesy of re-election, which I will accept with some hesitancy, because it does involve much more work than one will readily appreciate that has not been through it. Our first president, who was before us this noon, Mr. MacFarland, and our second president, Judge Cullinan, both realize the work devolving upon the chief executive officer of this Association, and with the assurance that it is unanimous and that I may still have your active co-operation, I will endeavor to serve as best I can for the coming year. (Applause.)

JUDGE CULLINAN: We all know that the Rivers and Harbors Congress is to be held on the first Wednesday in December in the city of Washington. We all desire that the State of New York shall be properly—to use a perhaps not very elegant phrase—properly programmed. Now, I have gone to those conventions and found out that our place on that program was of such a nature that we were not able to effectively insist upon the recognition that this Empire State was entitled to. Sometimes we were told we were too late; perhaps we were. But in order that we may not be asleep at the switch, I move, Mr. Chairman, that you take up the question with President Ransdell immediately relative to the question of the program of the National Rivers and Harbors Congress and ascertain from him upon what part of that program we will be entitled to be represented, and also ask from him what he would like.

Motion seconded and carried.

GEORGE CLINTON (Buffalo): I want to say this about the various organizations that are advocating waterway improvement. I think that there has been injected into the movement since I first had to do with it too much of a sectional feeling which has resulted in the formation of different organizations that have finally reached a point of almost hostility to each other, and that feeling ought to be obviated. I don't know that those here understand what the Rivers and Harbors Congress stands for. Originally the movement for rivers and harbors appropriations was chaotic, and emanated from the different sections of the country and the subdivisions of those sections, resulting in what is called "log-rolling" in Congress. Some men got together in Washington and the first principle which they adopted, the one they now stand by, is that that Congress does not represent any project whatever but a simple policy, and that policy is to procure from Congress consecutive annual appro-

priations sufficient to carry on the work of improving the waterways and harbors of this country to completion within a reasonable time, and they fixed the amount at \$50,000,000. That Congress is the head and front of our waterway improvement.

Now, to explain what I mean. I am a little in earnest about this because I want this feeling to disappear. We sit here representing the interests of the State of New York. If we are to work them out in Congress, we must do it through some such powerful body as the Rivers and Harbors Congress, which represents the movement throughout the entire United States. Now, it is true that at the sessions of that Congress there has been more activity, more energy displayed, on the part of certain identified interests in certain sections of the United States. It is particularly true on the Pacific coast. They are getting improvements for the Columbia River. It has been most prominent in the case of the efforts to secure the improvement of the Mississippi River — the Rivers and Harbors Congress has.

Here is everyone who desires to speak through representatives urging the claims of their localities, but advocating no project. We have been the ones who have not performed our duty by the State of New York. I beg the President's pardon. He has been very actively attempting to do this, but as a body we have not.

The city of Philadelphia originated the movement for the improvement of the Delaware and Chesapeake Canal, accompanied by the movement for the improvement of the lower Delaware River. To attract support, the scheme of the intra-coastal waterway was originated, following largely the early reports of Mr. Gallatin of the Senate of the United States, many years ago. That off-shoot, if it may be so called, sprung up because the Rivers and Harbors Congress stood for a policy and not a project, but just as we stand for a project in the case of the State of New York, and not a policy. It has grown into an admirable organization, but it is only a combination of organizations which represent particular projects, and while it should be supported because it is to our interest to support it, we never will accomplish anything directly through it unless we support with all our energy the Rivers and Harbors Congress. (Applause.)

PRESIDENT HILL: You have adopted a resolution in my absence authorizing the appointment of a committee in regard to the Washington entertainment and representation at various hearings and matters in Washington, and you have limited the number to fourteen. I want to suggest that the chair be authorized to appoint at least fifteen, and will the mover of the resolution permit it to be amended so as to make the number fifteen instead of fourteen?

MR. REID: I move to amend the resolution according to the suggestion of the President.

PRESIDENT HILL: Move to amend the resolution by making the number 15 instead of 14.

Motion seconded and carried.

PRESIDENT HILL: I will say for those of you who were not present at the meeting of the Executive Committee, in its session on October 29th it decided on having five members of that committee, which are as follows: The President, Mr. Olin J. Stephens, Mr. S. Christy Mead of New York, Mr. Charles E. Reid of New York, and Mr. Edward N. McKinney of Albany. Now the Chair desires to add the following names, pursuant to that resolution. I appoint the following gentlemen in addition to those named by the Executive Committee which I also reappoint or confirm: Robert J. MacFarland of Brooklyn, Dell L. Tuttle of Buffalo, James T. Hutchings of Rochester, Frank L. Moore of Watertown, Senator T. Harvey Ferris of Utica, Edward W. Douglas of Troy, Hon. Patrick W. Cullinan of Oswego, Howard D. Hadley of Plattsburgh, Nelson B. Killmer of Brooklyn, Miles Ayrault of North Tonawanda. That makes a committee of 15 instead of 14, and the number of that committee is such that I think we can secure the results desired. That is the dinner committee.

I understand that the resolution, which I have not had a chance to examine, authorizes the committee to appear before the Rivers and Harbors Committee or any other committee at Washington and to urge any matters that may come before it. I didn't want my distinguished friend, Robert J. MacFarland, who is a good worker in Washington, left off. I thought he ought to be appointed.

You will notice that we omitted the address of W. C. Brown, president of the New York Central Railroad, who had conditionally accepted the invitation to address this Association at this time. It was very gratifying to me to feel that we had a president of the New York Central Railroad system, comprising really all of the Vanderbilt lines, who was broad-minded enough to come into a waterways convention and discuss transportation matters in their broadest aspects. He was very generous in his appreciation of the courtesy of an invitation which I extended to him personally, and which was accepted conditionally, however, on the ground that under an act of Congress the railroad properties are being valued and it was necessary for him to conform to orders of the Interstate Commerce Commission or the board acting under it, and he said that it was possible that his time might be so engrossed that he could not be with us, but he indicated his interest in the work of the Waterways Association and said it would afford him great pleasure to be with us, if it were possible for him to do so. Day before yesterday I received a telegram from him, dated at Chicago, saying, "I regret exceedingly that it is going to be absolutely out of the question for me to be in Albany to attend the Convention. I am tied up here and don't know when I can get away. Truly yours, W. C. Brown."

This is one illustration, and there are many others, of gentlemen who have been identified with transportation in its broadest aspects, of their seeing light in the line of union, and that our work is supplemental to the work of transportation by railroads. We have, for instance, in attendance at this Convention, Mr. E. A. Niel, coal freight agent of the Buffalo, Rochester & Pittsburgh Railroad Company, from Rochester; we have also our friend, Mr. Dell L. Tuttle, whose admirable address you listened to to-day, and other traffic managers are coming into this Association, which augurs well for the State of New York, because if we were not able to co-operate in transportation matters, and if the railway traffic managers did not appreciate, especially those identified with organizations in this state, that New York State is after all the great carrying state of the Union, if they were to overlook the fact that in the end our efforts are for the best interests of all, we would be confronted with a serious situation. You will remember that Senator Chauncey M. Depew once said in a speech, in substance, that there was room for Canals and railways in New York, and that he was not opposed to any waterway improvement that the state might undertake. It augurs well for the State of New York that railway men are willing to come into our conventions and take part in our deliberations, and thus far we haven't had anything but the kindest feeling for them and they for us. I am very glad that we have not gotten into that position where we cannot receive them, listen to them, and take such suggestions as they may have for our consideration.

It has been suggested by the Albany delegation that Mr. Edward T. Coffin, secretary of the Albany Chamber of Commerce, who has been unfailing in his courtesy to us, be substituted for the name of Mr. William B. Jones on the Executive Committee, on account of Mr. Jones' illness and inability to be with us, and, I think, also on account of his removal from the city, and they desire to place Mr. Coffin on the Executive Committee, as I understand it; that is the wishes of the Albany delegation.

MR. REID (New York): Just in line with the President's remarks, I am pleased to learn that former United States Senator Depew has rather changed his mind, because my statistics tell about his appearing before the Rivers and Harbors Committee of the House of Representatives twenty-five years ago, and asking for the filling in of the Harlem River.

PRESIDENT HILL: I referred to the address which I think he made in Elmira or in some one of the southern New York State towns — Captain Clark will remember — and I understood that he was really the first president of the New York Central system to take a broad and statesmanlike view of the subject of transportation by water, more than a quarter of a century ago, and I don't think he has changed his position in that regard. I am very glad to know that President Brown was willing to meet with us, although subsequently prevented from doing so by matters over which he had no control.

This evening we are to have an illustrated lecture on "The Atlantic Coastal Project," by the secretary of the association, who is here in the hall this afternoon. President Moore wrote me that he could not come on account of other engagements, and I know you will all be pleased this evening to hear and see what has been done in regard to that waterway which, as Mr. Clinton and others have said, is the next most important thing for us to consider after the Barge Canals are completed. I hope that those of you who are not familiar with the work of the Atlantic Deeper Waterways Association, which advises Congress as to what they think ought to be done, will appear here this evening, because you will miss a great deal if you fail to do so. Let us give our friend from Philadelphia a hearty welcome, hear what he has to say, and give him what assistance we can in that great work.

I remember the time when Congressman Moore was the only man along the Atlantic coast that had a word to say in favor of a general inland waterway from one section of the country to the other, and he has labored for years and has sent his special representative here to-day to present that subject to this Convention. I hope you will all attend this evening.

MR. DES MARETS (New York): I want to call attention to one matter before we adjourn. In all the reports which have been made with reference to places — and believe me, our section is not jealous of any other section, nor ought we to be. We ought all to work for the definite improvement of the whole state. Though I am a resident of Queens and very much interested in ordinary local matters which are under way, particularly the Flushing and Jamaica Bay Canal and the improvement of Jamaica Bay, I want to call attention to the fact that there is a territory across the Sound from us in the borough of the Bronx which has a waterfront not used at all, comparatively, at present, and that can be vastly improved for terminal facilities. When the East River is improved and Hell Gate is blown out, we will have the use of that as well as all the other waterfront around the borough of Queens and we will have the front of the borough of the Bronx as well to accommodate the congested conditions which now exist.

PRESIDENT HILL: In the morning, I understand, we are to have autos provided for any who would like to go and see the locks at Waterford and the Crescent dam. Are there any Albany gentlemen who can speak on the matter advisedly?

MR. COFFIN: I believe we will leave at 9 o'clock from the Ten Eyck Hotel.

PRESIDENT HILL: I hope some of you gentlemen will remain over and go. I am particularly anxious to have my friend, Frank S. Oakes of Cattaraugus, who has been so constant in his attendance, go and see the results of his work. It will be remembered that Mr. Oakes — and I speak advisedly — was the only man in the interior of one of the western counties of this state to whom, more than ten years ago, we could appeal for support, and when we did so he never on any occasion failed to respond as ably as he could.

I think it is one of the greatest tributes that can be paid to a man to see his work nearing completion, as in the case of the Barge Canal, and to see his predictions verified. Gentlemen, it required nerve, the like of which possibly no man in this Convention ever was required to exert, to stand from year to year, almost isolated from the rest of the business interests, as the lone advocate in his community of the Barge Canal project, as did Mr. Oakes, and it does my heart good to see him in this Convention.

I think that is virtually all the work of the Convention, with the exception of the address we are to have this evening. I would like to have authority to incorporate that address in the minutes of the Convention and close the Convention, with that exception, for the year.

MR. REID: I so move.

PRESIDENT HILL: Unless someone can see some objection to it. Will that be satisfactory? We will assume it is delivered before we adjourn; of course, it will be delivered this evening and we will incorporate the address in the proceedings of the Convention.

MR. DES MARETS: I want to urge the necessity of replenishing the treasury of this Association. We have elected you again as the President of this Association, Mr. Hill, and I appeal to the members of the Association that we support the President in a proper manner with financial aid, which is actually necessary to carry on the work. I hope before we adjourn finally that some liberal-hearted men of the Association will come forward and subscribe enough to carry us through for the present, at least.

PRESIDENT HILL: We need money, of course, to go on with the printing which will be ordered and we must have the money. There is not money enough on hand at present to publish the proceedings.

FRANK S. OAKES (Cattaraugus): I simply want to thank the President for his very courteous allusion to me and say I am glad we are not as lonesome as we used to be. I, of course, come from Cattaraugus county, where, through the efforts of some of us, through writing articles for our leading papers, we had over 2,000 votes for the canal, and I should be very glad to go along and see the locks to-morrow, but I have to go home to-night.

In my county we have no navigable waters but we have lots of milk and lots of cream and butter and cheese, and we want the best way possible to transport it to the great markets elsewhere in the state. We have no waterways there. I don't come here to ask for anything for my particular locality, but I am one of those who believe that, any part of the state being benefited, it benefits all the rest of the state. That is the policy upon which I work. While we have sufficient water to drink, and I think it is the best drink a man can have, we haven't any for transportation purposes.

PRESIDENT HILL: That is one charming feature about the work of our friend, Hon. Frank S. Oakes, that he was not expecting and could not receive any particular benefits.

I want to have it appear on the record that personally—and I think I speak for the executive officers of this Association—we are exceedingly grateful to the speakers, to the members of the committees who have served us so well, and to all others who have contributed in any way to make this Convention a success. I know we have a resolution to that effect but I want it to appear on the record that I am very grateful to the speakers for the work that they put into the preparation of their addresses and the time they have taken to come here and deliver them, because when the history of this state is written, it will be found that the contributions made by this Convention in its various sessions to the literature on waterways and transportation by water, water storage and other subjects identified therewith, has been as great as has ever been made by any body of men in an equal length of time in the history of this state. Let us not forget that. If they say we don't amount to much because we have small numbers, ask them to point to a single organization in public life or out of it that can parallel the splendid papers that we have had presented to us during the last two days, and I trust that they will find readers from one end to the other of the Empire State, which ought to have interest enough in its own welfare to stand the test that is coming in rivalry from other states and remain the Empire State of this great republic of ours.

MR. DES MARETS: I would move you, sir, through the Secretary, that the request of the President be complied with and that he be authorized to

insert in the report of this Association such matter as he thinks best on that subject.

SECRETARY ELLSWORTH: The motion has been made and seconded. Those in favor will please say "aye," those against, "no;" the motion is unanimously carried.

PRESIDENT HILL: There is one thing more I should have said. You will notice there was a symposium on our calendar. Letters were sent to every member of Congress of this state, requesting them to be with us on this occasion. There were no omissions. That suggestion came to me from the Albany Committee on Arrangements and was faithfully complied therewith. I have in our possession letters from a majority of the members of Congress, saying that they thought it would not be possible for them to comply with the cordial invitation. In each letter attention was called to the necessity of Federal aid for New York waterway projects, so there could be no misunderstanding as to what we expected and desired them to do. I say this for the benefit of our Harlem friends and Albany friends and other friends, that they have had notice; they have had an invitation to be here, and to-day we are honored by the presence of two Congressmen who are very much interested in our work, and we are assured by many others that they would be very glad to co-operate with us.

I want that to appear on the record. That accounts for not having a symposium on our record. Our calendar, I think, otherwise has been carried out literally. There was one other case, that of Mr. Willis H. Tennant, another farmer, was unable to be here. His work in 1900 startled the people of this state in the speech he made in Syracuse, which some of you will remember. He wrote me a letter of regret that he could not be here on this occasion.

CAPTAIN CLARK: I can testify to the faithfulness of Mr. Frank S. Oakes. I want to live in hope that the time will come when the great Genesee River will be opened up and the Allegany down to New Orleans. I wish to bear Mr. Oakes witness of his great work in this movement.

PRESIDENT HILL: With the understanding that the address this evening will be incorporated in the minutes, this Convention will stand adjourned *sine die*.

FRIDAY EVENING.

Convention called to order at 8 o'clock.

PRESIDENT HILL: We have had two very interesting illustrated talks on the previous evening of the sessions of this Convention and to-night we are to have an illustrated talk on "The Atlantic Coastal Project." The matter of the coastal canal has been brought to our attention quite forcibly in the last half dozen years through its advocacy of Congressman Moore of Philadelphia, and the waterways of this state are in a way interlinked with the coastal project as we have been advised by the speakers who have appeared before our Convention and by what we know from reading and from observation of what is intended to be accomplished by that project. I think it is fair to assume that the tonnage over the coastal canal will be quite as large as the ocean tonnage that is now tributary to our canal system.

We are fortunate to-night in having the secretary of the Atlantic Deeper Waterways Association, who has come here from Philadelphia to give us a talk on this subject, with illustrations of the work that has been done. I take pleasure in presenting to you Mr. Wilfred H. Schoff of Philadelphia. (Applause.)

MR. SCHOFF: Mr. President and gentlemen and brethren in this work of waterway improvement, I assume that we are all working because we believe in the cause and because we are missionaries from our enthusiasm and our faith in the need and in the future destiny of the waterways of the United States.

It has been with the greatest pleasure that we in the Atlantic Association have followed the work, the virile and wonderfully effective and efficient work,

that is being done by the New York State Waterways Association. It is an inspiration to have your delegates and representatives with us every year and it is somewhat of an inspiration to have the pleasure of meeting with you on your own home ground here in Albany at the terminus of your wonderful Barge Canal.

I want to try to show you this evening in detail a very different condition of things along our Atlantic seaboard from what you in New York State have so successfully completed, or are about so successfully to complete, within this state; that is to say, a chain of old canals which represent almost the time of the Revolution, the conditions of the Revolution, without ever having had an improvement made on them since, and yet important to you — just as important as they are to those in Boston, Baltimore, Philadelphia or Norfolk or points farther south, because they form all together one trunk line of connected transportation, a system with which your Barge Canal will form a physical connection and form a great and a tremendously important link in the through transportation from the Great Lakes and the interior and the distribution of traffic along the entire Atlantic seaboard.

In our histories we are told that the Erie Canal was the means of building up New York State because of its communication with the growing and expanding West. But I think that we all will agree that the Barge Canal will serve a much larger traffic and will have a very much larger part to play in the internal transportation system of the country than merely the carriage of grain or other staple products for export through the port of New York. It will be a factor which will link the Great Lakes and all that they represent in the future transportation of the country with the industrial cities of the whole Atlantic seaboard. It will mean the carriage of lake ore, for instance, here to Albany and Troy and down the river as far as New York, and then, if you please, up and down the coast from New England to whatever point south products can be economically carried.

I find the appreciation of that is growing wherever it is mentioned. I find, for instance, that in a territory such as in Taunton, Mass., where, as a matter of history, it is interesting to know that some of the first iron was made in this country, ore being taken out and worked up into stove iron there in Taunton—I find that they are figuring now on the reawakening of that industry through the means which will be given them of cheap transportation of lake ore through the New York Barge Canal down the Hudson River and up Long Island Sound, and they have their own project for the improvement of eighteen miles of river there to connect Taunton with Narragansett Bay and put them in physical connection with your system.

I find the same idea is opening up all along the seaboard, so that where a few years ago, as Mr. Clinton so very aptly said this afternoon, you had only a few little projects, private interests and distinctly local interests, now you have the appreciation that there is possible, and that we are on the very threshold of achieving a great public waterway which will run along the entire length of our Atlantic seaboard, which will provide us a very cheap transportation of a different kind from what is carried by sea, and which will link those great industrial centers with the productive interior and form an ideal through system of communication.

I think perhaps the pictures I have brought to show you this evening will tell the story better than if I were to try to tell you by word of mouth any of the different local conditions, but I want to call your attention from the very beginning to the fact that there will be pictures of an old worn-out transportation system on which the army engineers have been making surveys for the last few years as the result of an agitation instituted a few years ago. Those surveys are now, with very few exceptions, reporting to Congress and reporting favorably, and the recommendations made definitely for the beginning of the work, and in some cases the work has been instituted and short links of canal purchased from their private owners, or put under way under government engineers.

I will try to show you what the New York Barge Canal means not only to New York City and Buffalo and Albany and Troy and Rochester, but to the whole Atlantic seaboard of this country, which will have a direct vital connection with them.

Mr. Clinton spoke this afternoon of the Atlantic Deeper Waterways Association, and I was very much interested and pleased with what he had to say. So, reviving a project which was written into the public minds and put into the records of the nation by no less a statesman than John C. Calhoun two generations ago, I would like to go a little farther back of Mr. Calhoun and say that some of the most essential links of this inter-coastal waterway project were largely planned out — no survey made, but were thought out and recommended and spoken of in public speeches and papers by the first president of the republic — by George Washington.

Beginning with the Cape Cod Canal, Mr. Schoff showed a large number of pictures of scenes along and adjacent to the proposed route of the intra-coastal canal. He remarked that there was an absence of engineering difficulties in the project, that it was a dredging proposition in short links connecting large navigable bodies of water. He spoke of the relations between the intra-coastal and the Barge Canal and showed views of the latter. South of New York City, he said, the barges of the present Erie Canal were still the maximum size and draft that can travel any protected waterway now available to commerce. Pictures were also shown of Staten Island and Mr. Schoff said that where a few years ago there was nothing but seventeen miles of salt marsh and mosquitos, almost all of the frontage is now occupied by industrial establishments drawn thither by the rail and water connections. Pictures from the Delaware and Raritan Canal, the proposed New Jersey Ship Canal, the Delaware River, the Delaware and Chesapeake Canal, of harbor fronts at Philadelphia, Wilmington and other points, the Chesapeake and Albemarle Canal, the Dismal Swamp, and other waterways, natural and artificial, southward to Florida, were shown. With the pictures Mr. Schoff gave an exhaustive and interesting description of the work that has been and is being done as an integral part of the intra-coastal project. He was heartily applauded at the close.

PRESIDENT HILL: It is needless for me to add anything to the applause which you have received, Mr. Schoff, at the conclusion of your splendid address, in recognition of its value and of its illuminating qualities which we have all enjoyed. We appreciate, however, that you have come a long distance, and you have given us many suggestions and have put before us a practical view of the work which your association has been carrying on so zealously and intelligently for many years.

As has been said repeatedly during our sessions, that the inter-coastal canal cannot fail to contribute a very much greater tonnage to our canal system in this state than we have ever dreamed of. The interlocking of so many systems by water communication, as has been shown here this evening, ought to convince anyone of its importance who thinks for a moment of the possibilities for water transportation along the Atlantic coast with the large products, with the resources of the territory tributary to the Atlantic seaboard, and who appreciates the fact that we will have an enormous tonnage up and down the Atlantic coast, and that New York will get its share.

I am very glad, Mr. Schoff, to advise you that this Association this afternoon adopted resolutions calling upon the Governor of this State, if he could find it consistent with his duties, to attend your convention at Jacksonville, and to speak for this Association, also that the President do the same, if he can find it possible so to do.

We are glad to aid you in every way possible, and kindly convey to your president, Congressman Moore, the appreciation of this Association for sending you here and for the presentation of this subject so ably to this audience, and take to him the assurance that he will have from now on, if he has not had it before, the active co-operation of this Association and the members of the different organizations which we represent in this state.

MR. SCHOFF: I am sure that he has had it before through your own work and through that of many others of your members, and it will be still more of an encouragement to him that we still have it and will continue to

have it. Personally it is a very great pleasure to be with you and to meet with you.

PRESIDENT HILL: This brings our busy Convention to a close. Again we express our deep appreciation to our Albany friends for their unfailing courtesy and splendid hospitality, and their good fellowship, and may they succeed in all the righteous endeavors to which they aspire.

RECEPTION AND BANQUET TENDERED BY THE NEW YORK STATE WATERWAYS ASSOCIATION TO HON. MARTIN H. GLYNN, GOVERNOR, AND TO THE UNITED STATES SENATORS AND CONGRESSMEN FROM THE STATE OF NEW YORK.

Rauscher's, Washington, D. C.

December 4, 1913.

A reception and banquet to Hon. Martin H. Glynn, Governor, and to the United States Senators and Congressmen from the State of New York was tendered by the New York State Waterways Association, at Rauscher's, Connecticut Avenue and L Street, Washington, D. C., Thursday night, December 4, 1913, during the eleventh annual National Rivers and Harbors Congress.

There were 350 guests present, including Secretary of Commerce William C. Redfield, Governor Martin H. Glynn, United States Senator James O'Gorman, and thirty-two Congressmen.

President Henry W. Hill presided. Among the speakers were Governor Glynn, Secretary Redfield, Senator O'Gorman, Congressman Fitzgerald, of New York; James T. Hoile, Brooklyn; Dell L. Tuttle, Buffalo; Vice-President, C. S. Sims, Delaware & Hudson Railroad Co., Albany; Frank S. Silsworth, Rochester; Captain E. A. Des Marets, College Point.

JOINT MEETING OF THE EXECUTIVE COMMITTEE AND THE COMMITTEE ON LEGISLATION OF THE NEW YORK STATE WATERWAYS ASSOCIATION.

Hotel Ten Eyck, Albany, N. Y.

January 5, 1914.

A joint meeting of the Executive Committee and the Committee on Legislation of the New York State Waterways Association was held at the Hotel Ten Eyck, Albany, N. Y., on January 5, 1914.

Present: President Henry W. Hill, William J. Roche, Charles E. Reid, Edward N. McKinney, George Clinton, Edward N. Smith, Robert H. Rogers, James T. Hutchings, John R. Myers, Celestin C. Burns, Lachlan MacLeay, Edwin A. Fisher, Edwin T. Coffin, Frederick W. Cameron, Frank S. Gardner, Nelson B. Killmer, E. Platt Stratton, Samuel Sanders, E. A. Des Marets, Edward F. Murray, State Senator Argetsinger and Assemblyman Henry E. H. Brereton.

President Hill called the meeting to order, and on motion of George Clinton, was elected chairman of the joint meeting and Edwin T. Coffin, secretary.

William J. Roche, chairman of the Committee on Legislation, stated the purposes of the bills to be introduced in the Legislature amending the navigation and corporation laws of the State of New York. The first bill would prevent railroad corporations from owning, controlling or holding any stock in any navigation company. Vessels engaged in carrying freight and cars from one station to another or from a terminal to vessels, within the lighterage limit of New York City, or within any harbor where used for such purpose, would be exempt from the provisions of this act.

Mr. Clinton stated that the railroads control all traffic on the waterways at present, that the proposed bill was not intended to restrict railroad enterprises but to protect the people's money invested in the canals and to bring about free competition on the waterways.

After a lengthy discussion the second bill was taken up for consideration. This bill would amend that section of the Public Service Law defining the term "common carriers" so as to include navigation companies and water lines, except ferries.

This bill also would confer the power on the Public Service Commission to establish through rates on all connecting lines applying where one connecting line is a water line. Mr. Roche stated that the object was to get the state statutes as much like the Federal statutes as possible. It would also give to navigation companies and shippers by water the same treatment as if they shipped solely by rail. After some discussion Mr. Reid moved that these bills be approved and that the Committee on Legislation be requested to perfect them in harmony with the sentiments of the meeting, that they be introduced in the Legislature and the Governor and Legislature be urged to pass them. Motion seconded and carried.

Assemblyman Brereton wished to be put on record as reserving the right to criticize these bills at a later date.

President Hill announced that the New York Produce Exchange has become a member of the Association.

On motion of Mr. MacLeay, the Committee on Legislation was instructed to send copies of the revised bills to all commercial organizations of the state and to members of the Waterways Association.

At 1:15 recess was taken and the members of the committees were the guests of Mr. Edward N. McKinney at luncheon. The committees re-convened at 2:15 P. M.

Mr. Clinton brought up the question of the abandonment of the old canal and the disposition of the lands and structures. Senator George F. Argetsinger read and explained a bill he has drawn covering this question. On motion of Mr. Reid, the bill was endorsed with suggested changes.

The question of an investigation of the State Engineer's office in regard to the construction of the Barge Canal was brought up by Mr. Clinton. The committee were unanimously of the opinion that no action should be taken.

Assemblyman Brereton asked for the endorsement of his bill favoring the Black River improvement, Glens Falls feeder, Chemung River improvement and the Jamaica Bay project. On motion of Mr. Reid, the committee reiterated its approval of last year of these projects but the form of the bill was left to a committee to be appointed by the Chair.

On motion of Mr. Rogers, the proposed bills were put in the hands of Senator Argetsinger for presentation and it was decided that 500 copies of each bill be printed and handed to Mr. Roche for distribution.

On motion of Mr. Reid, the following committee was appointed to represent the Association at a conference to be held in New York City, January 6, 1914, to discuss the question of the conservation of the water powers of the state: Messrs. Clinton, Gardner, Fisher, Murray, Rogers and Smith.

The hydro-electric problem was discussed briefly by Mr. Clinton, Mr. Smith and others but no action was taken.

Adjourned.

MEETING OF THE EXECUTIVE COMMITTEE OF THE NEW YORK STATE WATERWAYS ASSOCIATION.

Room 237, Capitol, Albany, N. Y.

March 3, 1914.

A meeting of the Executive Committee of the New York State Waterways Association was held in Room 237, Capitol, Albany, N. Y., March 3, 1914. Hon. George Clinton, chairman, presided and Edwin T. Coffin acted as Secretary.

Present: Messrs. Clinton, McKinney, McConnell, Lamon, Roche, Killmer, Smith, Murray, Hutchings, Cadwell, Jones, Cobb, Coffin, Clark, Cameron and Argetsinger.

The committee discussed the proposed bill for issuing bonds for the improvement of the canal system by the extension of the Black River Canal, the reconstruction of the Chemung Canal, the conversion of the Glens Falls feeder into a canal, the construction of a canal between Flushing River and Jamaica Bay and the construction of a canal between Newtown Creek and the Jamaica Bay Canal, and for the purchase of lands required for such improvements, and providing for a submission of the same to the people to be voted upon at a general election to be held in the year 1914.

Mr. Killmer moved that it is the sense of the meeting that the Newtown Creek project be eliminated from the bill. Motion carried. Senator Cobb moved the approval of the bill with the exception of the Newtown Creek project. Carried.

The committee also discussed Senator Argetsinger's bill providing for the sale of such portions of the Erie Canal as may be abandoned.

Messrs. Carl H. Smith of Buffalo, M. H. Knapp of Syracuse, H. D. Bruce of Syracuse and E. L. Robertson, representing the Syracuse Chamber of Commerce, appeared before the committee in behalf of the abutting owners of property along the portions of the canal that may be abandoned. They asked for the amendment of the bill so as to grant them the privilege of purchasing that portion of the canal upon which their property abutted. Senator Argetsinger opposed any changes. The committee took no action upon the question.

Senate Bills 352 and 353, introduced by Mr. Murtaugh, were discussed and Mr. Roche explained certain features of these bills.

The committee also discussed the proposed bill covering the question of the conservation of waters of the State for the purpose of regulating the flow of streams by storage reservoirs. Upon the motion of Mr. Smith, it was decided that it was the sense of the meeting that the conservation bill prepared by the committee be introduced and a conference held with the Governor regarding it.

Adjourned.

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